

ESSAYS:
SCIENTIFIC, POLITICAL, AND SPECULATIVE.

HERBERT SPENCER,

AUTHOR OF "FIRST PRINCIPLES," "PRINCIPLES OF BIOLOGY," "PRINCIPLES OF PSYCHOLOGY,"
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P R E F A C E.

A THIRD series of Essays, in great measure corresponding with this, was issued a year and a half since in the United States; but a reason then in force deterred me from issuing it here. That reason no longer holding, I have prepared this volume, differing from its counterpart by some omissions and some additions. One essay added to the American Edition, I exclude because a volume of Essays already published here, contains it; and another, on "Morals and Moral Sentiments," which first appeared in the *Fortnightly Review* for April, 1871, I exclude because I have embodied the essential parts of it in certain closing chapters of the *Principles of Psychology*, and I have no wish to perpetuate its controversial and personal parts.

One of the included essays—that entitled "Specialized Administration"—though in a measure controversial, I reproduce; because it contains facts and arguments which are, I think, of more than ephemeral interest, and because permanence having been given to the question it deals with, the reply may fitly have a permanent form. Not only do I reciprocate most cordially the utterance of kind feeling with which Prof. Huxley prefaces the republication of his "Administrative Nihilism;" and not

only do I rejoice that divergence of opinion is not likely to weaken a long-established, and highly-valued friendship; but I may add the expression of my great regret that I should be obliged still to differ from one whose agreement, more than that of any other friend, confirms me in any conclusion I have drawn. I fear, however, that, holding though we do so many beliefs in common, there remains respecting this sociological question no alternative but amicable opposition.

On the brief rejoinder to my arguments which Prof. Huxley makes in the preface to his *Critiques and Addresses*, I may here say a few words. The reasons he gives for still thinking that the name "Administrative Nihilism" fitly indicates the system which I have described as "negatively regulative," are, I think, adequately met by asking whether "Ethical Nihilism" would fitly describe the remnant of the decalogue, were all its positive injunctions omitted. If the eight commandments which, substantially or literally, come under the form "thou shalt not," constitute by themselves a set of rules which can scarcely be called nihilistic; I do not see how an administrative system limited to the enforcement of such rules can be called nihilistic: especially if to the punishment of murder, adultery, stealing, and false-witness, it adds the punishment of assault, breach of contract, and all minor aggressions, down to the annoyance of neighbours by nuisances. Respecting the second and essential question, whether limitation of the internal functions of government to those which are negatively regulative, is consistent with that theory of the social organism and its controlling

agencies held by me, I may say that the insufficiency of my reply has not, I think, been shown. I was tacitly asked how the analogy I have drawn between those governmental structures by which the parts of the body politic have their actions regulated and those nervous structures which regulate the organic actions of the individual living body, is to be reconciled with my belief that social activities will in the main adjust themselves. My answer was this. I recognized as essential the positively-regulative functions of the State in respect to the offensive and defensive appliances needful for national self-preservation, during the predatory phase of social evolution; and I not only admitted the importance of its negatively-regulative functions in respect to the internal social activities, but insisted that these should be carried out much more efficiently than now. Assuming always, however, that the internal social activities continue subject to that restraining action of the State which consists in preventing aggressions, direct and indirect, I contended that the co-ordination of these internal social activities is effected by other structures of a different kind. I aimed to show that my two beliefs are not inconsistent, by pointing out that in the individual organism, also, those vital activities which parallel the activities constituting national life, are regulated by a substantially-independent nervous system. Prof. Huxley does, indeed, remind me that recent researches show increasingly the influence of the cerebro-spinal nervous system over the processes of organic life; against which, however, has to be set the growing evidence of

the power exercised by the visceral nervous system over the cerebro-spinal. But, recognizing the influence he names (which, indeed, corresponds to that governmental influence I regard as necessary); I think the consistency of my positions is maintainable so long as it is manifest that the viscera, under the control of their own nervous system, can carry on the vital actions when the control of the cerebro-spinal system is substantially arrested by sleep, or by anæsthetics, or by other causes of insensibility; and while it is shown that a considerable degree of co-ordination may exist among the organs of a creature which has no nervous system at all.

A few words are needed respecting the additions which this volume contains. An illustration which seemed worth adding, occupies two pages at the close of the article on "Specialized Administration." To the essay entitled "What is Electricity?" I have, somewhat rashly perhaps, put a postscript, carrying further the view originally set forth: thinking that in the absence of an established theory, an hypothesis having some verisimilitude might be worth consideration. The addition of chief importance, however, is that with which the volume closes—"Replies to Criticisms." This, first published in the *Fortnightly Reviews* for last November and December, with the intention of forthwith including it here, I had originally meant to reproduce just as it stood. One of my critics, however, a writer in the *British Quarterly Review*, to whom, in the closing pages of these "Replies to Criticisms," I had given a brief answer, that was mild considering the character of his attack, has seen fit, in the last number of

the *British Quarterly Review*, to reiterate certain assertions I had not space to notice. Moved chiefly by the fact that he brings against me the authorities of Prof. Tait and Sir William Thomson, I have thought well to extend the article, that I might meet his injurious mis-statements. Those who read these rejoinders, will perhaps agree with me in thinking that it would have been better had he let the matter stand as my first reply left it.

LONDON, *February*, 1874.

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I.

THE CLASSIFICATION OF THE SCIENCES.

PREFACE

TO THE THIRD EDITION.

IN the preface to the second edition, I have described myself as resisting the temptation to amplify, which the occasion raised. Reasons have since arisen for yielding to the desire which I then felt to add justifications of the scheme set forth.

The immediate cause for this change of resolve, has been the publication of several objections by Prof. Bain in his *Logic*. Permanently embodied, as these objections are, in a work intended for the use of students, they demand more attention than such as have been made in the course of ordinary criticism; since, if they remain unanswered, their prejudicial effects will be more continuous.

While to dispose of these I seize the opportunity afforded by a break in my ordinary work, I have thought it well at the same time to strengthen my own argument, by a re-statement from a changed point of view.

Feb., 1871.

says, with a candour equally rare and admirable, that he has vainly searched M. Comte's works and his own mind for an answer. Nevertheless, he adds—"j'ai réussi, je crois, à écarter l'attaque de M. Herbert Spencer, et à sauver le fond par des sacrifices indispensables mais accesssoires." The sacrifices are these. He abandons M. Comte's division of Inorganic Science into Celestial Physics and Terrestrial Physics—a division which, in M. Comte's scheme, takes precedence of all the rest; and he admits that neither logically nor historically does Astronomy come before Physics, as M. Comte alleges. After making these sacrifices, which most will think too lightly described as "sacrifices indispensables mais accesssoires," M. Littré proceeds to rehabilitate the Comtean classification in a way which he considers satisfactory, but which I do not understand. In short, the proof of these incongruities affects his faith in the Positivist theory of the sciences, no more than the faith of a Christian is affected by proof that the Gospels contradict one another.

Here in England I have seen no attempt to meet the criticisms with which M. Littré thus deals. There has been no reply to the allegation, based on examples, that the several sciences do not develop in the order of their decreasing generality; nor to the allegation, based on M. Comte's own admissions, that within each science the progress is not, as he says it is, from the general to the special; nor to

the allegation that the seeming historical precedence of Astronomy over Physics in M. Comte's pages, is based on a verbal ambiguity—a mere sleight of words; nor to the allegation, abundantly illustrated, that a progression in an order the reverse of that asserted by M. Comte may be as well substantiated; nor to various minor allegations equally irreconcilable with his scheme. I have met with nothing more than iteration of the statement that the sciences *do* conform, logically and historically, to the order in which M. Comte places them; regardless of the assigned evidence that they *do not*.

Under these circumstances it is unnecessary for me to say more; and I think I am warranted in continuing to hold that the Comtean classification of the sciences is demonstrably untenable.

While, however, I have not entered further into the controversy, as I thought of doing, I have added at the close an already-published discussion, no longer easily accessible, which indirectly enforces the general argument.

LONDON, 23RD APRIL, 1869.

THE CLASSIFICATION OF THE SCIENCES.

IN an essay on "The Genesis of Science," originally published in 1854, I endeavoured to show that the Sciences cannot be rationally arranged in serial order. Proof was given that neither the succession in which the Sciences are placed by M. Comte (to a criticism of whose scheme the essay was in part devoted), nor any other succession in which the Sciences can be placed, represents either their logical dependence or their historical dependence. To the question—How may their relations be rightly expressed? I did not then attempt any answer. This question I propose now to consider.

+ A true classification includes in each class, those objects which have more characteristics in common with one another, than any of them have in common with any objects excluded from the class. Further, the characteristics possessed in common by the colligated objects, and not possessed by other objects, are more radical than any characteristics possessed in common with other objects—involve more numerous

dependent characteristics. These are two sides of the same definition. For things possessing the greatest number of attributes in common, are things that possess in common those essential attributes on which the rest depend; and, conversely, the possession in common of the essential attributes, implies the possession in common of the greatest number of attributes. Hence, either test may be used as convenience dictates.

If, then, the Sciences admit of classification at all, it must be by grouping together the like and separating the unlike, as thus defined. Let us proceed to do this.

The broadest natural division among the Sciences, is the division between those which deal with the abstract relations under which phenomena are presented to us, and those which deal with the phenomena themselves. Relations of whatever orders, are nearer akin to one another than they are to any objects. Objects of whatever orders, are nearer akin to one another than they are to any relations. Whether, as some hold, Space and Time are forms of Thought; or whether, as I hold myself, they are forms of Things, that have become forms of Thought through organized and inherited experience of Things; it is equally true that Space and Time are contrasted absolutely with the existences disclosed to us in Space and Time; and that the Sciences which deal exclusively with Space and Time, are separated by the profoundest of all distinctions from the Sciences which deal with the

existences that Space and Time contain. Space is the abstract of all relations of co-existence. Time is the abstract of all relations of sequence. And dealing as they do entirely with relations of co-existence and sequence, in their general or special forms, Logic and Mathematics form a class of the Sciences more widely unlike the rest, than any of the rest can be from one another.

The Sciences which deal with existences themselves, instead of the blank forms in which existences are presented to us, admit of a sub-division less profound than the division above made, but more profound than any of the divisions among the Sciences individually considered. They fall into two classes, having quite different aspects, aims, and methods. Every phenomenon is more or less composite—is a manifestation of force under several distinct modes. Hence result two objects of inquiry. We may study the component modes of force separately; or we may study them in their relations, as co-operative factors in this composite phenomenon. On the one hand, neglecting all the incidents of particular cases, we may aim to educe the laws of each mode of force, when it is uninterfered with. On the other hand, the incidents of the particular case being given, we may seek to interpret the entire phenomenon, as a product of the several forces simultaneously in action. The truths reached through the first kind of inquiry, though concrete inasmuch as they have actual existences for their subject-matters,

are abstract inasmuch as they refer to the modes of existence apart from one another; while the truths reached by the second kind of inquiry are properly concrete, inasmuch as they formulate the facts in their combined order, as they occur in Nature.

The Sciences, then, in their main divisions, stand thus:—

{ that which treats of the forms in which phenomena are known to us }	ABSTRACT	(Logic and
	SCIENCE	(Mathematics.)

SCIENCE is

in their elements }	ABSTRACT-	(Mechanics,
	CONCRETE	
	SCIENCE	(Physics, Chemistry, etc.)

that which treats of the
phenomena themselves

{ in their totalities }	CONCRETE	(Astronomy, Geology, Biology, Psychology, Sociology, etc.)
	SCIENCE	

It is needful to define the words *abstract* and *concrete* as thus used; since they are sometimes used with other meanings. M. Comte divides Science into abstract and concrete; but the divisions which he distinguishes by these names are quite unlike those above made. Instead of regarding some Sciences as wholly abstract, and others as wholly concrete, he regards each Science as having an abstract part, and a concrete part. There is, according to him, an abstract mathematics and a concrete mathematics—an

abstract biology and concrete biology. He says:—
 “Il faut distinguer, par rapport à tous les ordres de phénomènes, deux genres de sciences naturelles: les unes abstraites, générales, ont pour objet la découverte des lois qui régissent les diverses classes de phénomènes, en considérant tous les cas qu'on peut concevoir; les autres concrètes, particulières, descriptives, et qu'on désigne quelquefois sous le nom de sciences naturelles proprement dites, consistent dans l'application de ces lois à l'histoire effective de différens êtres existans.” And to illustrate the distinction, he names general physiology as abstract, and zoology and botany as concrete. Here it is manifest that the words *abstract* and *general* are used as synonymous. They have, however, different meanings; and confusion results from not distinguishing their meanings. Abstractness means *detachment from* the incidents of particular cases. Generality means *manifestation in* numerous cases. On the one hand, the essential nature of some phenomenon is considered, apart from disguising phenomena. On the other hand, the frequency of the phenomenon, with or without disguising phenomena, is the thing considered. Among the ideal relations of numbers the two coincide; but excluding these, an abstract truth is not realizable to perception in any case of which it is asserted, whereas a general truth is realizable to perception in every case of which it is asserted. Some illustrations will make the distinction clear. Thus it is an abstract truth that the angle contained

in a semi-circle is a right angle—abstract in the sense that though it does not hold in actually-constructed semi-circles and angles, which are always inexact, it holds in the ideal semi-circles and angles abstracted from real ones; but this is not a general truth, either in the sense that it is commonly manifested in Nature, or in the sense that it is a space-relation that comprehends many minor space-relations: it is a quite special space-relation. Again, that the momentum of a body causes it to move in a straight line at a uniform velocity, is an abstract-concrete truth—a truth abstracted from certain experiences of concrete phenomena; but it is by no means a general truth: so little generality has it, that no one fact in Nature displays it. Conversely, surrounding things supply us with hosts of general truths that are not in the least abstract. It is a general truth that the planets go round the Sun from West to East—a truth which holds good in something like a hundred cases (including the cases of the planetoids); but this truth is not at all abstract, since it is perfectly realized as a concrete fact in every one of these cases. Every vertebrate animal whatever, has a double nervous system; all birds and all mammals are warm-blooded—these are general truths, but they are concrete truths: that is to say, every vertebrate animal individually presents an entire and unqualified manifestation of this duality of the nervous system; every living bird exemplifies absolutely or completely

the warm-bloodedness of birds. What we here call, and rightly call, a general truth, is simply a proposition which *sums up* a number of our actual experiences ; and not the expression of a truth *drawn from* our actual experiences, but never presented to us in any of them. In other words, a general truth colligates a number of particular truths ; while an abstract truth colligates no particular truths, but formulates a truth which certain phenomena all involve, though it is actually seen in none of them.

Limiting the words to their proper meanings as thus defined, it becomes manifest that the three classes of Sciences above separated, are not distinguishable at all by differences in their degrees of generality. They are all equally general ; or rather they are all, considered as groups, universal. Every object whatever presents at once the subject-matter for each of them. In the smallest particle of substance we have simultaneously illustrated the abstract truths of relation in Time and Space ; the abstract-concrete truths in conformity with which the particle manifests its several modes of force ; and the concrete truths which are the laws of the joint manifestation of these modes of force. Thus these three classes of Sciences severally formulate different, but co-extensive, classes of facts. Within each group there are truths of greater and less generality : there are general abstract truths, and special abstract truths ; general abstract-concrete truths, and special abstract-concrete truths ;

general concrete truths, and special concrete truths. But while within each class there are groups and sub-groups and sub-sub-groups which differ in their degrees of generality, the classes themselves differ only in their degrees of abstractness.*

* Some propositions laid down by M. Littré, in his lately-published book—*Auguste Comte et la Philosophie Positive*, may fitly be dealt with here. In the candid and courteous reply he makes to my strictures on the Comtean classification in "The Genesis of Science," he endeavours to clear up some of the inconsistencies I pointed out; and he does this by drawing a distinction between objective generality and subjective generality. He says—"qu'il existe deux ordres de généralité, l'une objective et dans les choses, l'autre subjective, abstraite et dans l'esprit." This sentence, in which M. Littré makes subjective generality synonymous with abstractness, led me at first to conclude that he had in view the same distinction as that which I have above explained between generality and abstractness. On re-reading the paragraph, however, I found this was not the case. In a previous sentence he says—"La biologie a passé de la considération des organes à celles des tissus, plus généraux que les organes, et de la considération des tissus à celle des éléments anatomiques, plus généraux que les tissus. Mais cette généralité croissante est subjective non objective, abstraite non concrète." Here it is manifest that abstract and concrete, are used in senses analogous to those in which they are used by M. Comte; who, as we have seen, regards general physiology as abstract and zoology and botany as concrete. And it is further manifest that the word abstract, as thus used, is not used in its proper sense. For, as above shown, no such facts as those of anatomical structure can be abstract facts; but can only be more or less general facts. Nor do I understand M. Littré's point of view when he regards these more general facts of anatomical structure, as *subjectively* general and not *objectively* general. The structural phenomena presented by any tissue, such as mucous membrane, are more general than the phenomena presented by any of the organs which mucous membrane goes to form, simply in the sense that the phenomena peculiar to the membrane are repeated in a greater number of instances than the phenomena peculiar to any organ into the composition of which the membrane enters. And, similarly, such facts as have been established respecting the anatomical elements of tissues, are more general than the facts established respecting any particular tissue, in the sense that they are facts which organic bodies exhibit in a greater number of cases—they are *objectively* more general; and they can be called *subjectively* more general only in the sense that the conception corresponds with the phenomena.

Let me endeavour to clear up this point:—There is, as M. Littré truly says, a decreasing generality that is objective. If we omit the phenomena of Dissolution, which are changes from the special to the general, all changes which matter undergoes are from the general to the special—are changes involving a decreasing

Passing to the sub-divisions of these classes, we find that the first class is separable into two parts—the one containing universal truths, the other non-universal truths. Dealing wholly with relations apart from related things, Abstract Science considers first, that which is common to all relations whatever; and second, that which is common to each order of relations. Besides the indefinite and variable connexions which exist among phenomena, as occurring together in Space and Time, we find that there are also definite

generality in the united groups of attributes. This is the progress of *thing*. The progress of *thought*, is not only in the same direction, but also in the opposite direction. The investigation of Nature discloses an increasing number of specialities; but it simultaneously discloses more and more the generalities within which these specialities fall. Take a case. Zoology, while it goes on multiplying the number of its species, and getting a more complete knowledge of each species (decreasing generality); also goes on discovering the common characters by which species are united into larger groups (increasing generality). Both these are subjective processes; and in this case, both orders of truths reached are concrete—formulate the phenomena as actually manifested.

M. Littré, recognizing the necessity for some modification of the hierarchy of the Sciences, as enunciated by M. Comte, still regards it as substantially true; and for proof of its validity, he appeals mainly to the essential *constitutions* of the Sciences. It is unnecessary for me here to meet, in detail, the arguments by which he supports the proposition, that the essential constitutions of the Sciences, justify the order in which M. Comte places them. It will suffice to refer to the foregoing pages, and to the pages which are to follow, as containing the definitions of those fundamental characteristics which demand the grouping of the Sciences in the way pointed out. As already shown, and as will be shown still more clearly by and bye, the radical differences of constitution among the Sciences, necessitate the colligation of them into the three classes—Abstract, Abstract-Concrete, and Concrete. How irreconcilable is M. Comte's classification with these groups, will be at once apparent on inspection. It stands thus:—

Mathematics (including rational Mechanics), partly Abstract, partly
Abstract-Concrete.

Astronomy	Concrete.
Physics.....	Abstract-Concrete.
Chemistry	Abstract-Concrete.
Biology.....	Concrete.
Sociology	Concrete.

and invariable connexions—that between each kind of phenomenon and certain other kinds of phenomena, there exist uniform relations. This is a universal abstract truth—that there is an unchanging order among things in Space and Time. We come next to the several kinds of unchanging order, which, taken together, form the subjects of the second division of Abstract Science. Of this second division, the most general sub-division is that which deals with the natures of the connexions in Space and Time, irrespective of the terms connected. The conditions under which we may predicate a relation of coincidence or proximity in Space and Time (or of non-coincidence or non-proximity) form the subject-matter of Logic. Here the natures and amounts of the terms between which the relations are asserted (or denied) are of no moment: the propositions of Logic are independent of any qualitative, or quantitative specification of the related things. The other sub-division has for its subject-matter, the relations between terms which are specified quantitatively but not qualitatively. The amounts of the related terms, irrespective of their natures, are here dealt with; and Mathematics is a statement of the laws of quantity considered apart from reality. Quantity considered apart from reality, is occupancy of Space or Time; and occupancy of Space or Time is measured by the number of coexistent or sequent positions occupied. That is to say, quantities can be

compared and the relations between them established, only by some direct or indirect enumeration of their component units; and the ultimate units into which all others are decomposable, are such occupied positions in Space as can, by making impressions on consciousness, produce occupied positions in Time. Among units that are unspecified in their natures (extensive, protensive, or intensive), but are ideally endowed with existence considered apart from attributes, the quantitative relations that arise, are those most general relations expressed by numbers. Such relations fall into either of two orders, according as the units are considered simply as capable of filling separate places in consciousness, or according as they are considered as filling places that are not only separate, but equal. In the one case, we have that indefinite calculus by which numbers of abstract existences, but not sums of abstract existence, are predicable. In the other case, we have that definite calculus by which both numbers of abstract existences and sums of abstract existence are predicable. Next comes that division of Mathematics which deals with the quantitative relations of magnitudes (or aggregates of units) considered as coexistent, or as occupying Space—the division called Geometry. And then we arrive at relations, the terms of which include both quantities of Time and quantities of Space—those in which times are estimated by the units of space traversed at a uniform velocity, and those in which equal

units of time being given, the spaces traversed with uniform or variable velocities are estimated. These Abstract Sciences, which are concerned exclusively with relations and with the relations of relations, may be grouped as shown in Table I.

Passing from the Sciences that treat of the ideal or unoccupied forms of relations, and turning to the Sciences that treat of real relations, or the relations among realities, we come first to those Sciences which deal with realities, not as they are habitually manifested to us, but with realities as manifested in their different modes, when these are artificially separated from one another. In the same way that the Abstract Sciences are ideal, relatively to the Abstract-Concrete and Concrete Sciences; so the Abstract-Concrete Sciences are ideal, relatively to the Concrete Sciences. Just as Logic and Mathematics have for their object to generalize the laws of relation, qualitative and quantitative, apart from related things; so, Mechanics, Physics, Chemistry, etc., have for their object to generalize the laws of relation which different modes of Matter and Motion conform to, when severally disentangled from those actual phenomena in which they are mutually modified. Just as the geometrician formulates the properties of lines and surfaces, independently of the irregularities and thicknesses of lines and surfaces as they really exist; so the physicist and the chemist formulate the mani-

festations of each mode of force, independently of the disturbances in its manifestations which other modes of force cause in every actual case. In works on Mechanics, the laws of motion are expressed without reference to friction and resistance of the medium. Not what motion ever really is, but what it would be if retarding forces were absent, is asserted. If any retarding force is taken into account, then the effect of this retarding force is alone contemplated: neglecting the other retarding forces. Consider, again, the generalizations of the physicist respecting molecular motion. The law that light varies inversely as the square of the distance, is absolutely true only when the radiation goes on from a point without dimensions, which it never does; and it also assumes that the rays are perfectly straight, which they cannot be unless the medium differs from all actual media in being perfectly homogeneous. If the disturbing effects of changes of media are investigated, the formulæ expressing the refractions take for granted that the new media entered are homogeneous; which they never really are. Even when a compound disturbance is allowed for, as when the refraction undergone by light in traversing a medium of increasing density, like the atmosphere, is calculated, the calculation still supposes conditions that are unnaturally simple—it supposes that the atmosphere is not pervaded by heterogeneous currents, which it always is. Similarly with the inquiries of the

chemist. He does not take his substances as Nature supplies them. Before he proceeds to specify their respective properties, he purifies them—separates from each all trace of every other. Before ascertaining the specific gravity of a gas, he has to free this gas from the vapour of water, usually mixed with it. Before describing the properties of a salt, he guards against any error that may arise from the presence of an uncombined portion of the acid or base. And when he alleges of any element that it has a certain atomic weight, and unites with such and such equivalents of other elements, he does not mean that the results thus expressed are exactly the results of any one experiment; but that they are the results which, after averaging many trials, he concludes would be realized if absolute purity could be obtained, and if the experiments could be conducted without loss. His problem is to ascertain the laws of combination of molécules, not as they are actually displayed, but as they would be displayed in the absence of those minute interferences which cannot be altogether avoided. Thus all these Abstract-Concrete Sciences have for their object, *analytical interpretation*. In every case it is the aim to decompose the phenomenon, and formulate its components apart from one another; or some two or three apart from the rest. Wherever, throughout these Sciences, synthesis is employed, it is for the verification of analysis.*

* I am indebted to Prof. Frankland for reminding me of an objection that may be

The truths elaborated are severally asserted, not as truths exhibited by this or that particular object; but as truths universally holding of Matter and Motion in their more general or more special forms, considered apart from particular objects, and particular places in space.

The sub-divisions of this group of Sciences, may be drawn on the same principle as that on which the sub-divisions of the preceding group were drawn. Phenomena, considered as more or less involved manifestations of force, yield on analysis, certain laws of manifestation that are universal, and other laws of manifestation, which, being dependent on conditions, are not universal. Hence the Abstract-Concrete Sciences are primarily divisible into—the laws of force considered apart from its separate modes, and laws of force considered under each of its separate modes. And this second division of the Abstract-Concrete group, is sub-divisible after a manner essentially analogous. It is needless to occupy space by

made to this statement. The production of new compounds by synthesis, has of late become an important branch of chemistry. According to certain known laws of composition, complex substances, which never before existed, are formed, and fulfil anticipations both as to their general properties and as to the proportions of their constituents—as proved by analysis. Here it may be said with truth, that analysis is used to verify synthesis. Nevertheless, the exception to the above statement is apparent. In so far as the production of new compounds, is not carried on merely for the obtainment of such new compounds, it is not synthesis. Art—the application of pre-established knowledge to the achievement of ends. This proceeding is a part of Science, only in so far as it is a means to the better interpretation of the order of Nature. And how does it aid the interpretation? It does it only by verifying the pre-established conclusions respecting the laws of molecular combination; or by serving further to explain them. That is to say, these syntheses, considered on their scientific side, have simply the purpose of *justifying the analysis of the laws of chemical combination.*

defining these several orders and genera of Sciences. Table II. will sufficiently explain their relations.

We come now to the third great group. We have done with the Sciences which are concerned only with the blank forms of relations under which Being is manifested to us. We have left behind the Sciences which, dealing with Being under its universal mode, and its several non-universal modes regarded as independent, treats the terms of its relations as simple and homogeneous, which they never are in Nature. There remain the Sciences which, taking these modes of Being as they are connected with one another, have for the terms of their relations, those heterogeneous combinations of forces that constitute actual phenomena. The subject-matter of these Concrete-Sciences is the real, as contrasted with the wholly or partially ideal. It is their aim, not to separate and generalize apart the components of all phenomena; but to explain each phenomenon as a product of these components. Their relations are not, like those of the simplest Abstract-Concrete Sciences, relations between one antecedent and one consequent; nor are they, like those of the more involved Abstract-Concrete Sciences, relations between some few antecedents cut off in imagination from all others, and some few consequents similarly cut off; but they are relations each of which has for its terms a complete plexus of antecedents and a complete plexus of consequents. This is manifest in the

least involved Concrete Sciences. The astronomer seeks to explain the Solar System. He does not stop short after generalizing the laws of planetary movement, such as planetary movement would be did only a single planet exist; but he solves this abstract-concrete problem, as a step towards solving the concrete problem of the planetary movements as affecting one another. In astronomical language, "the theory of the Moon" means an interpretation of the Moon's motions, not as determined simply by centripetal and centrifugal forces, but as perpetually modified by gravitation towards the Earth's equatorial protuberance, towards the Sun, and even towards Venus—forces daily varying in their amounts and combinations. Nor does the astronomer leave off when he has calculated what will be the position of a given body at a given time, allowing for all perturbing influences; but he goes on to consider the effects produced by reactions on the perturbing masses. And he further goes on to consider how these mutual perturbations of the planets cause, during a long period, increasing deviations from a mean state; and then how compensating perturbations cause continuous decrease in the deviations. That is, the goal towards which he ever strives, is a complete explanation of these complex planetary motions in their totality. Similarly with the geologist. He does not take for his problem only those irregularities of the Earth's crust that are worked by denudation; or only those which igneous

action causes. He does not seek simply to understand how sedimentary strata were formed; or how faults were produced; or how moraines originated; or how the beds of Alpine lakes were scooped out. But taking into account all agencies co-operating in endless and ever-varying combinations, he aims to interpret the entire structure of the Earth's crust. If he studies separately the actions of rain, rivers, glaciers, icebergs, tides, waves, volcanoes, earthquakes, etc.; he does so that he may be better able to comprehend their joint actions as factors in geological phenomena: the object of his science being to generalize these phenomena in all their involved connections, as parts of one whole. In like manner Biology is the elaboration of a complete theory of Life, in each and all of its involved manifestations. If different aspects of its phenomena are investigated apart—if one observer busies himself in classing organisms, another in dissecting them, another in ascertaining their chemical compositions, another in studying functions, another in tracing laws of modification; they are all, consciously or unconsciously, helping to work out a solution of vital phenomena in their entirety, both as displayed by individual organisms and by organisms at large. Thus, in these Concrete Sciences, the object is the converse of that which the Abstract-Concrete Sciences propose to themselves. In the one case we have *analytical interpretation*; while in the other case we have *synthetical interpretation*. Instead of synthesis

being used merely to verify analysis; analysis is here used only to aid synthesis. Not to formulate the factors of phenomena is now the object; but to formulate the phenomena resulting from these factors, under the various conditions which the Universe presents.

This third class of Sciences, like the other classes, is divisible into the universal and the non-universal. As there are truths which hold of all phenomena in their elements; so there are truths which hold of all phenomena in their totalities. As force has certain ultimate laws common to its separate modes of manifestation, so in those combinations of its modes which constitute actual phenomena, we find certain ultimate laws that are conformed to in every case. These are the laws of the re-distribution of force. Since we can become conscious of a phenomenon only by some change wrought in us, every phenomenon necessarily implies re-distribution of force—change in the arrangements of matter and motion. Alike in molecular movements and the movements of masses, one great uniformity may be traced. A decreasing quantity of motion, sensible or insensible, always has for its concomitant an increasing aggregation of matter; and, conversely, an increasing quantity of motion, sensible or insensible, has for its concomitant a decreasing aggregation of matter. Give to the molecules of any mass, more of that insensible motion which we call heat, and the parts of the mass become somewhat less closely aggregated. Add a further quantity of insensible motion,

and the mass so far disintegrates as to become liquid. Add still more insensible motion, and the mass disintegrates so completely as to become gas; which occupies a greater space with every extra quantity of insensible motion given to it. On the other hand, every loss of insensible motion by a mass, gaseous, liquid, or solid, is accompanied by a progressing integration of the mass. Similarly with sensible motions, be the bodies moved large or small. Augment the velocities of the planets, and their orbits will enlarge—the Solar System would occupy a wider space. Diminish their velocities, and their orbits will lessen—the Solar System will contract, or become more integrated. And in like manner we see that every sensible motion on the Earth's surface involves a partial disintegration of the moving body from the Earth; while the loss of its motion is accompanied by the body's re-integration with the Earth. In all phenomena we have either an integration of matter and concomitant dissipation of motion; or an absorption of motion and concomitant disintegration of matter. And where, as in living bodies, these processes are going on simultaneously, there is an integration of matter proportioned to the dissipation of motion, and an absorption of motion proportioned to the disintegration of matter. Such, then, are the universal laws of that re-distribution of matter and motion everywhere going on—a re-distribution which results in Evolution so long as

the aggregation of matter and dispersion of motion predominate; but which results in Dissolution where there is a predominant aggregation of motion and dispersion of matter. Hence we have a division of Concrete Science which bears towards the other Concrete Sciences, a relation like that which Universal Law of Relation bears to Mathematics, and like that which Universal Mechanics (composition and resolution of forces) bears to Physics. We have a division of Concrete Science which generalizes those concomitants of this re-distribution that hold good among all orders of concrete objects—a division which explains why, along with a predominating integration of matter and dissipation of motion, there goes a change from an indefinite, incoherent homogeneity, to a definite, coherent heterogeneity; and why a reverse re-distribution of matter and motion, is accompanied by a reverse structural change. Passing from this universal Concrete Science, to the non-universal Concrete Sciences; we find that these are primarily divisible into the science which deals with the re-distributions of matter and motion among the masses in space, consequent on their mutual actions as wholes; and the science which deals with the re-distributions of matter and motion consequent on the mutual actions of the molecules in each mass. And of these equally general Sciences, this last is re-divisible into the Science which is limited to the concomitants of re-distribution among the molecules of each mass when regarded as inde-

pendent, and the Science which takes into account the molecular motion received by radiation from other masses. But these sub-divisions, and their sub-sub-divisions, will be best seen in the annexed Table III.

That these great groups of Sciences and their respective sub-groups, fulfil the definition of a true classification given at the outset, is, I think, tolerably manifest. The subjects of inquiry included in each primary division, have essential attributes in common with one another, which they have not in common with any of the subjects contained in the other primary divisions; and they have, by consequence, a greater number of common attributes in which they severally agree with the colligated subjects, and disagree with the subjects otherwise colligated. Between Sciences which deal with relations apart from realities, and Sciences which deal with realities, the distinction is the widest possible; since Being, in some or all of its attributes, is common to all Sciences of the second class, and excluded from all Sciences of the first class. The distinction between the empty forms of things and the things themselves, is a distinction which cannot be exceeded in degree. And when we divide the Sciences which treat of realities, into those which deal with their separate components and those which deal with their components as united, we make a profounder distinction than can exist between the Sciences which deal with one or other order

of the components, or than can exist between the Sciences which deal with one or other order of the things composed. The three groups of Sciences may be briefly defined as—laws of the *forms*; laws of the *factors*; laws of the *products*. And when thus defined, it becomes manifest that the groups are so radically unlike in their natures, that there can be no transitions between them; and that any Science belonging to one of the groups must be quite incongruous with the Sciences belonging to either of the other groups, if transferred. How fundamental are the differences between them, will be further seen on considering their functions. The first, or abstract group, is *instrumental* with respect to both the others; and the second, or abstract-concrete group, is *instrumental* with respect to the third or concrete group. An endeavour to invert these functions will at once show how essential is the difference of character. The second and third groups supply subject-matter to the first, and the third supplies subject-matter to the second; but none of the truths which constitute the third group are of any use as solvents of the problems presented by the second group; and none of the truths which the second group formulates can act as solvents of problems contained in the first group. Concerning the subdivisions of these great groups, little remains to be added. That each of the groups, being co-extensive with all phenomena, contains truths that are universal

and others that are not universal, and that these must be classed apart, is obvious. And that the subdivisions of the non-universal truths, are to be made in something like the manner shown in the tables, is proved by the fact that when the descriptive words are read from the root to the extremity of any branch, they form a definition of the Science constituting that branch. That the minor divisions might be otherwise arranged, and that better definitions of them might be given, is highly probable. They are here set down merely for the purpose of showing how this method of classification works out.

I will only further remark, that the relations of the Sciences as thus represented, are still but imperfectly represented: their relations cannot be truly shown on a plane, but only in space of three dimensions. The three groups cannot rightly be put in linear order as they have here been. Since the first stands related to the third, not only indirectly through the second, but also directly—it is directly instrumental with respect to the third, and the third supplies it directly with subject-matter. Their relations can thus only be truly shown by a divergence from a common root on different sides, in such a way that each stands in juxta-position to the other two. And only by the like mode of arrangement, can the relations among the sub-divisions of each group be correctly represented.

POSTSCRIPT,

REPLYING TO CRITICISMS.

AMONG objections made to any doctrine, those which come from avowed supporters of an adverse doctrine must be considered, other things equal, as of less weight than those which come from men uncommitted to an adverse doctrine, or but partially committed to it. The element of prepossession, distinctly present in the one case and in the other case mainly or quite absent, is a well-recognized cause of difference in the values of the judgments: supposing the judgments to be otherwise fairly comparable. Hence, when it is needful to bring the replies within a restricted space, a fit course is that of dealing rather with independent criticisms than with criticisms which are really indirect arguments for an opposite view, previously espoused.

For this reason I propose here to confine myself substantially, though not absolutely, to the demurrers entered against the foregoing classification by Prof. Bain, in his recent work on Logic. Before dealing with the more important of these, let me clear the ground by disposing of the less important.

Incidentally, while commenting on the view I take respecting the position of Logic, Prof. Bain points out that this, which is the most abstract of the sciences, owes much to Psychology, which I place among the Concrete Sciences; and he alleges an incongruity between this fact and my statement that the Concrete Sciences are not instrumental

in disclosing the truths of the Abstract Sciences. Subsequently he re-raises this apparent anomaly when saying—

“Nor is it possible to justify the placing of Psychology wholly among Concrete Sciences. It is a highly analytic science, as Mr. Spencer thoroughly knows.”

For a full reply, given by implication, I must refer Prof. Bain to § 56 of *The Principles of Psychology*, where I have contended that “while, under its objective aspect, Psychology is to be classed as one of the Concrete Sciences which successively decrease in scope as they increase in speciality; under its subjective aspect, Psychology is a totally unique science, independent of, and antithetically opposed to, all other sciences whatever.” A pure idealist will not, I suppose, recognize this distinction; but to every one else it must, I should think, be obvious that the science of subjective existences is the correlative of all the sciences of objective existences; and is as absolutely marked off from them as subject is from object. Objective Psychology, which I class among the Concrete Sciences, is purely synthetic, so long as it is limited, like the other sciences, to objective data; though great aid in the interpretation of these data is derived from the observed correspondence between the phenomena of Objective Psychology as presented in other beings and the phenomena of Subjective Psychology as presented in one’s own consciousness. Now it is Subjective Psychology only which is analytic, and which affords aid in the development of Logic. This being explained, the apparent incongruity disappears.

A difficulty raised respecting the manner in which I have expressed the nature of Mathematics, may next be dealt with. Prof. Bain writes:—

“In the first place, objection may be taken to his language, in discussing the extreme Abstract Sciences, when he speaks of the *empty forms* therein considered. To call Space and Time empty

forms, must mean that they can be thought of without any concrete embodiment whatsoever; that one can think of Time, as a pure abstraction, without having in one's mind any concrete succession. Now, this doctrine is in the last degree questionable."

I quite agree with Prof. Bain that "this doctrine is in the last degree questionable;" but I do not admit that this doctrine is implied by the definition of Abstract Science which I have given. I speak of Space and Time as they are dealt with by mathematicians, and as it is alone possible for pure Mathematics to deal with them. While Mathematics habitually uses in its points, lines, and surfaces, certain existences, it habitually deals with these as representing points, lines, and surfaces that are ideal; and *its conclusions are true only on condition that it does this*. Points having dimensions, lines having breadths, planes having thicknesses, are negatived by its definitions. Using, though it does, material representatives of extension, linear, superficial, or solid, Geometry deliberately ignores their materiality; and attends only to the truths of relation they present. Holding with Prof. Bain, as I do, that our consciousness of Space is disclosed by our experiences of Matter—arguing, as I have done in *The Principles of Psychology*, that it is a consolidated aggregate of all relations of co-existence that have been severally presented by Matter; I nevertheless contend that it is possible to dissociate these relations from Matter to the extent required for formulating them as abstract truths. I contend, too, that this separation is of the kind habitually made in other cases; as, for instance, when the general laws of motion are formulated (as M. Comte's system, among others, formulates them) in such way as to ignore all properties of the bodies dealt with save their powers of taking up, and retaining, and giving out, quantities of motion; though these powers are inconceivable apart from the attribute of extension, which is intentionally disregarded.

Taking other of Prof. Bain's objections, not in the order in which they stand but in the order in which they may be most conveniently dealt with, I quote as follows:—

"The law of the radiation of light (the inverse square of the distance) is said by Mr. Spencer to be Abstract-Concrete, while the disturbing changes in the medium are not to be mentioned except in a Concrete Science of Optics. We need not remark that such a separate handling is unknown to science."

It is perfectly true that "such a separate handling is unknown to science." But, unfortunately for the objection, it is also perfectly true that no such separate handling is proposed by me, or is implied by my classification. How Prof. Bain can have so missed the meaning of the word "concrete," as I have used it, I do not understand. After pointing out that "no one ever drew the line," between the Abstract-Concrete and the Concrete Sciences, "as I have done it," he alleges an anomaly which exists only supposing that I have drawn it where it is ordinarily drawn. He appears inadvertently to have carried with him M. Comte's conception of Optics as a Concrete Science, and, importing it into my classification, debits me with the incongruity. If he will re-read the definition of the Abstract-Concrete Sciences, or study their sub-divisions as shown in Table II., he will, I think, see that the most special laws of the redistribution of light, equally with its most general laws, are included. And if he will pass to the definition and the tabulation of the Concrete Sciences, he will, I think, see no less clearly that Optics cannot be included among them.

Prof. Bain considers that I am not justified in classing Chemistry as an Abstract-Concrete Science, and excluding from it all consideration of the crude forms of the various substances dealt with; and he enforces his dissent by saying that chemists habitually describe the ores and impure mixtures in which the elements, etc., are naturally found. Undoubtedly chemists do this. But do they therefore intend

to include an account of the ores of a substance, *as a part of the science* which formulates its molecular constitution and the constitutions of all the definite compounds it enters into? I shall be very much surprised if I find that they do. Chemists habitually prefix to their works a division treating of Molecular Physics; but they do not therefore claim Molecular Physics as a part of Chemistry. If they similarly prefix to the chemistry of each substance an outline of its mineralogy, I do not think they therefore mean to assert that the last belongs to the first. Chemistry proper, embraces nothing beyond an account of the constitutions and modes of action and combining proportions of substances that are taken as absolutely pure; and its truths no more recognize impure substances than the truths of Geometry recognize crooked lines.

Immediately after, in criticizing the fundamental distinction I have made between Chemistry and Biology, as Abstract-Concrete and Concrete respectively, Prof. Bain says :—

“But the objects of Chemistry and the objects of Biology are equally concrete, so far as they go; the simple bodies of chemistry, and their several compounds, are viewed by the Chemist as concrete wholes, and are described by him, not with reference to one factor, but to all their factors.”

Issue is here raised in a form convenient for elucidation of the general question. It is true that, *for purposes of identification*, a chemist gives an account of all the sensible characters of a substance. He sets down its crystalline form, its specific gravity, its power of refracting light, its behaviour as magnetic or diamagnetic. But does he thereby include these phenomena as part of the Science of Chemistry? It seems to me that the relation between the weight of any portion of matter and its bulk, which is ascertained on measuring its specific gravity, is a physical and not a chemical fact. I think, too, that the physicist

will claim, as part of his science, all investigations touching the refraction of light: be the substance producing this refraction what it may. And the circumstance that the chemist may test the magnetic or diamagnetic property of a body, as a means of ascertaining what it is, or as a means of helping other chemists to determine whether they have got before them the same body, will neither be held by the chemist, nor allowed by the physicist, to imply a transfer of magnetic phenomena from the domain of the one to that of the other. In brief, though the chemist, in his account of an element or a compound, may refer to certain physical traits associated with its molecular constitution and affinities, he does not by so doing change these into chemical traits. Whatever chemists may put into their books, Chemistry, considered as a science, includes only the phenomena of molecular structures and changes—of compositions and decompositions.* I contend, then, that Chemistry does *not* give an account of anything as a concrete whole, in the same way that Biology gives an account of an organism as a concrete whole. This will become even more manifest on observing the character of the biological account. All the attributes of an organism are comprehended, from the most general to the most special—from its conspicuous structural traits to its hidden and faint ones; from its outer actions that thrust themselves on the attention, to the minutest sub-divisions of its multitudinous

* Perhaps some will say that such incidental phenomena as those of the heat and light evolved during chemical changes, are to be included among chemical phenomena. I think, however, the physicist will hold that all phenomena of re-distributed molecular motion, no matter how arising, come within the range of Physics. But whatever difficulty there may be in drawing the line between Physics and Chemistry (and, as I have incidentally pointed out in *The Principles of Psychology*, § 55, the two are closely linked by the phenomena of allotropy and isomerism), applies equally to the Comtean classification, or to any other. And I may further point out that no obstacle hence arises to the classification I am defending. Physics and Chemistry being both grouped by me as Abstract-Concrete Sciences, no difficulty in satisfactorily dividing them in the least affects the satisfactoriness of the division of the great group to which they both belong, from the other two great groups.

internal functions; from its character as a germ, through the many changes of size, form, organization, and habit, it goes through until death; from the physical characters of it as a whole, to the physical characters of its microscopic cells, and vessels, and fibres; from the chemical characters of its substance in general to the chemical characters of each tissue and each secretion—all these, with many others. And not only so, but there is comprehended as the ideal goal of the science, the *consensus* of all these phenomena in their co-existences and successions, as constituting a coherent individualized group definitely combined in space and in time. It is this recognition of *individuality* in its subject-matter, that gives its concreteness to Biology, as to every other Concrete Science. As Astronomy deals with bodies that have their several proper names, or (as with the smaller stars) are registered by their positions, and considers each of them as a distinct individual—as Geology, while dimly perceiving in the Moon and nearest planets other groups of geological phenomena (which it would deal with as independent wholes, did not distance forbid), occupies itself with that individualized group presented by the Earth; so Biology treats either of an individual distinguished from all others, or of parts or products belonging to such an individual, or of structural or functional traits common to many such individuals that have been observed, and supposed to be common to others that are like them in most or all of their attributes. Every biological truth connotes a specifically individualized object, or a number of specifically individualized objects of the same kind, or numbers of different kinds that are severally specific. See, then, the contrast. The truths of the Abstract-Concrete Sciences do not imply specific individuality. Neither Molar Physics, nor Molecular Physics, nor Chemistry, concerns itself with this. The laws of motion are expressed without any reference whatever to the sizes or shapes of the moving

masses; which may be taken indifferently to be suns or atoms. The relations between contraction and the escape of molecular motion, and between expansion and the absorption of molecular motion, are expressed in their general forms without reference to the kind of matter; and, if the degree of either that occurs in a particular kind of matter is formulated, no note is taken of the quantity of that matter, much less of its individuality. Similarly with Chemistry. When it inquires into the atomic weight, the molecular structure, the atomicity, the combining proportions, etc., of a substance, it is indifferent whether a grain or a ton be thought of—the conception of amount is absolutely irrelevant. And so with more special attributes. Sulphur, considered chemically, is not sulphur under its crystalline form, or under its allotropic viscid form, or as a liquid, or as a gas; but it is sulphur considered apart from those attributes of quantity, and shape, and state, that give individuality.

Prof. Bain objects to the division I have drawn between the Concrete Science of Astronomy and that Abstract-Concrete Science which deals with the mutually-modified motions of hypothetical masses in space, as “not a little arbitrary.” He says:—

“We can suppose a science to confine itself *solely* to the ‘factors,’ or the separated elements, and never, on any occasion, to combine two into a composite third. This position is intelligible, and possibly defensible. For example, in Astronomy, the Law of Persistence of Motion in a straight line might be discussed in pure ideal separation; and so, the Law of Gravity might be discussed in equally pure separation—both under the Abstract-Concrete department of Mechanics. It might then be reserved to a *concrete* department to unite these in the explanation of a projectile or of a planet. Such, however, is not Mr. Spencer’s boundary line. He allows Theoretical Mechanics to make this particular combination, and to arrive at the laws of planetary movement, *in the case of a single planet*. What he does not allow is, to proceed to the case of two planets, mutually disturbing one another, or a planet and a satellite, commonly called the ‘problem of the Three Bodies.’”

If I held what Prof. Bain supposes me to hold, my position would be an absurd one; but he misapprehends me. The misapprehension results in part from his having here, as before, used the word "concrete" with the Comtean meaning, as though it were my meaning; and in part from the inadequacy of my explanation. I did not in the least mean to imply that the Abstract-Concrete Science of Mechanics, when dealing with the motions of bodies in space, is limited to the interpretation of planetary movement such as it would be did only a single planet exist. It never occurred to me that my words (see p. 19) might be so construed. Abstract-Concrete problems admit, in fact, of being complicated indefinitely, without going in the least beyond the definition. I do not draw the line, as Prof. Bain alleges, between the combination of two factors and the combination of three, or between the combination of any number and any greater number. I draw the line between the science which deals with the theory of the factors, taken singly and in combinations of two, three, four, or more, and the science which, *giving to these factors the values derived from observations of actual objects, uses the theory to explain actual phenomena.*

It is true that, in these departments of science, no radical distinction is consistently recognized between theory and the applications of theory. As Prof. Bain says:—

"Newton, in the First Book of the Principia, took up the problem of the Three Bodies, as applied to the Moon, and worked it to exhaustion. So writers on Theoretical Mechanics continue to include the Three Bodies, Precession, and the Tides."

But, supreme though the authority of Newton may be as a mathematician and astronomer, and weighty as are the names of Laplace and Herschel, who in their works have similarly mingled theorems and the explanations yielded by them, it does not seem to me that these facts go for much; unless it can be shown that these writers intended thus to enunciate the views at which they had arrived respecting the classifi-

cation of the sciences. Such a union as that presented in their works, adopted merely for the sake of convenience, is, in fact, the indication of incomplete development; and has been paralleled in simpler sciences which have afterwards outgrown it. Two conclusive illustrations are at hand. The name Geometry, utterly inapplicable by its meaning to the science as it now exists, was applicable in that first stage when its few truths were taught in preparation for land-measuring and the setting-out of buildings; but, at a comparatively early date, these comparatively simple truths became separated from their applications, and were embodied by the Greek geometers into systems of theory.* A like purification is now taking place in another division of the science. In the *Géométrie Descriptive* of Monge, theorems were mixed with their applications to projection and plan-drawing. But, since his time, the science and the art have been segregating; and Descriptive Geometry, or, as it may be better termed, the Geometry of Position, is now recognized by mathematicians as a far-reaching system of truths, parts of which are already embodied in books that make no reference to derived methods available by the architect or the engineer. To meet a counter-illustration that will be cited, I may remark that though, in works on Algebra intended for beginners, the theories of quantitative relations, as treated algebraically, are accompanied by groups of problems to be solved, the subject-matters of these problems are not thereby made parts of the Science of Algebra. To say that they are, is to say that Algebra includes the conceptions of distances and relative speeds and times, or of weights and bulks and specific gravities, or of areas ploughed and days and wages; since these, and endless others, may be the terms of

* It may be said that the mingling of problems and theorems in Euclid is not quite consistent with this statement; and it is true that we have, in this mingling, a trace of the earlier form of the science. But it is to be remarked that these problems are all purely abstract, and, further, that each of them admits of being expressed as a theorem.

its equations. And just in the same way that these concrete problems, solved by its aid, cannot by any possibility be incorporated with the Abstract Science of Algebra; so I contend that the concrete problems of Astronomy, cannot by any possibility be incorporated with that division of Abstract-Concrete Science which develops the theory of the interactions of free bodies that attract one another.

On this point I find myself at issue, not only with Prof. Bain, but also with Mr. Mill, who contends that:—

“There *is* an abstract science of astronomy, namely, the theory of gravitation, which would equally agree with and explain the facts of a totally different solar system from the one of which our earth forms a part. The actual facts of our own system, the dimensions, distances, velocities, temperatures, physical constitution, etc., of the sun, earth, and planets, are properly the subject of a concrete science, similar to natural history; but the concrete is more inseparably united to the abstract science than in any other case, since the few celestial facts really accessible to us are nearly all required for discovering and proving the law of gravitation as an universal property of bodies, and have therefore an indispensable place in the abstract science as its fundamental data.”—*Auguste Comte and Positivism*, p. 43.

In this explanation, Mr. Mill recognizes the fundamental distinction between the Concrete Science of Astronomy, dealing with the bodies actually distributed in space, and a science dealing with hypothetical bodies hypothetically distributed in space. Nevertheless, he regards these sciences as not separable; because the second derives from the first the data whence the law of inter-action is derived. But the truth of this premiss, and the legitimacy of this inference, may alike be questioned. The discovery of the law of inter-action was not due primarily, but only secondarily, to observation of the heavenly bodies. The conception of an inter-acting force that varies inversely as the square of the distance, is an *a priori* conception rationally deducible from mechanical and geometrical considerations. Though unlike in derivation to the many empirical hypotheses of Kepler

respecting planetary orbits and planetary motions, yet it was like the successful among these in its relation to astronomical phenomena: it was one of many possible hypotheses, which admitted of having their consequences worked out and tested; and one which, on having its implications compared with the results of observation, was found to explain them. In short, the theory of gravitation grew out of experiences of terrestrial phenomena; but the verification of it was reached through experiences of celestial phenomena. Passing now from premiss to inference, I do not see that, even were the alleged parentage substantiated, it would necessitate the supposed inseparability; any more than the descent of Geometry from land-measuring necessitates a persistent union of the two. In the case of Algebra, as above indicated, the disclosed laws of quantitative relations hold throughout multitudinous orders of phenomena that are extremely heterogeneous; and this makes conspicuous the distinction between the theory and its applications. Here the laws of quantitative relations among masses, distances, velocities, and momenta, being applied mainly (though not exclusively) to the concrete cases presented by Astronomy, the distinction between the theory and its applications is less conspicuous. But, intrinsically, it is as great in the one case as in the other.

How great it is, we shall see on taking an analogy. This is a living man, of whom we may know little more than that he is a visible, tangible person; or of whom we may know enough to form a voluminous biography. Again, this book tells of a fictitious hero, who, like the heroes of old romance, may be an impersonated virtue or vice, or, like a modern hero, one of mixed nature, whose various motives and consequent actions are elaborated into a semblance of reality. But no accuracy and completeness of the picture makes this fictitious personage an actual personage, or brings him any nearer to one. Nor does any meagreness in our knowledge

of a real man reduce him any nearer to the imaginary being of a novel. To the last, the division between fiction and biography remains an impassable gulf. So, too, remains the division between the Science dealing with the inter-actions of hypothetical bodies in space, and the Science dealing with the inter-actions of existing bodies in space. We may elaborate the first to any degree whatever by the introduction of three, four, or any greater number of factors under any number of assumed conditions, until we symbolize a solar system; but to the last an account of our symbolic solar system is as far from an account of the actual solar system as fiction is from biography.

Even more obvious, if it be possible, does the radical character of this distinction become, on observing that from the simplest proposition of General Mechanics we may pass to the most complex proposition of Celestial Mechanics, without a break. We take a body moving at a uniform velocity, and commence with the proposition that it will continue so to move for ever. Next, we state the law of its accelerated motion in the same line, when subject to a uniform force. We further complicate the proposition by supposing the force to increase in consequence of approach towards an attracting body; and we may formulate a series of laws of acceleration, resulting from so many assumed laws of increasing attraction (of which the law of gravitation is one). Another factor may now be added by supposing the body to have motion in a direction other than that of the attracting body; and we may determine, according to the ratios of the supposed forces, whether its course will be hyperbolic, parabolic, elliptical, or circular—we may begin with this hypothetical additional force as infinitesimal, and formulate the varying results as it is little by little increased. The problem is complicated a degree more by taking into account the effects of a third force, acting in some other direction; and beginning with an infinitesimal amount of this force we may

reach any amount. Similarly, by introducing factor after factor, each at first insensible in proportion to the rest, we arrive, through an infinity of gradations, at a combination of any complexity.

Thus, then, the Science which deals with the inter-action of hypothetical bodies in space, is *absolutely continuous* with General Mechanics. We have already seen that it is *absolutely discontinuous* with that account of the heavenly bodies which has been called Astronomy from the beginning. When these facts are recognized, it seems to me that there cannot remain a doubt respecting its true place in a classification of the Sciences.

Passing over minor criticisms, either as met by implication or as demanding space that cannot be here afforded, let me say something by way of enforcing the general argument. I will re-state the case in two ways: the first of them adapted only to those who accept the general doctrine of Evolution.

We set out with concentrating nebulous matter. Trueing the re-distributions of this as the rotating contracting spheroid leaves behind successive annuli, and as these severally breaking up eventually form secondary rotating spheroids, we come at length to planets in their early stages. Thus far we consider the phenomena dealt with purely astronomical; and so long as our Earth, regarded as one of these spheroids, was made up of gaseous and molten matters only, it presented no definite data for any more complex Concrete Science. In the lapse of cosonical time a solid film forms, which, in the course of millions of years, thickens, and, in the course of further millions of years, becomes cool enough to permit the precipitation, first of various other gaseous compounds, and finally of water. Presently, the varying exposure of different parts of the spheroid to the Sun's rays, begins to produce appreciable

effects; until at length there have arisen meteorological actions, and consequent geological actions, such as those we now know: determined partly by the Sun's heat, partly by the still-retained internal heat of the Earth, and partly by the action of the Moon on the ocean? How have we reached these geological phenomena? When did the astronomical changes end and the geological begin? It needs but to ask this question to see that there is no real division between the two. Putting pre-conceptions aside, we find nothing more than a group of phenomena continually complicating under the influence of the same original factors; and we see that our conventional division is defensible only on grounds of convenience. Let us advance a stage. As the Earth's surface continues to cool, passing through all degrees of temperature by infinitesimal gradations, the formation of more and more complex inorganic compounds becomes possible; later its surface sinks to that heat at which the less complex compounds of the kinds called organic can exist; and finally the formation of the more complex organic compounds becomes possible. Chemists now show us that these compounds may be built up synthetically in the laboratory—each stage in ascending complexity making possible the next higher stage. Hence it is inferable that, in the myriads of laboratories, endlessly diversified in their materials and conditions, which the Earth's surface furnished during the myriads of years occupied in passing through these stages of temperature, such successive syntheses were effected; and that the highly complex unstable substance out of which all organisms are composed, was eventually formed in microscopic portions: from which, by continuous integrations and differentiations, the evolution of all organisms has proceeded. Where then shall we draw the line between Geology and Biology? The synthesis of this most complex compound, is but a continuation of the syntheses by which all simpler compounds were formed.

The same primary factors have been co-operating with those secondary factors, meteorologic and geologic, previously derived from them. Nowhere do we find a break in the ever-complicating series; for there is a manifest connexion between those movements which various complex compounds undergo during their isomeric transformations, and those changes of form undergone by the protoplasm which we distinguish as living. Strongly contrasted as they eventually become, biological phenomena are at their root inseparable from geological phenomena—inseparable from the aggregate of transformations continually wrought in the matters forming the Earth's surface by the physical forces to which they are exposed. Further stages I need not particularize. The gradual development out of the biological group of phenomena, of the more specialized group we class as psychological, needs no illustration. And when we come to the highest psychological phenomena, it is clear that since aggregations of human beings may be traced upwards from single wandering families to tribes and nations of all sizes and complexities, we pass insensibly from the phenomena of individual human action to those of corporate human action. To resume, then, is it not manifest that in the group of sciences—Astronomy, Geology, Biology, Psychology, Sociology, we have a natural group that admits neither of disruption nor change of order? Here there is both a genetic dependence, and a dependence of interpretations. The phenomena have arisen in this succession in cosmical time; and complete scientific interpretation of each group depends on scientific interpretation of the preceding groups. No other science can be thrust in anywhere without destroying the continuity. To insert Physics between Astronomy and Geology, would be to make a break in the history of a continuous series of changes; and a like break would be produced by inserting Chemistry between Geology and Biology. It is true that Physics and Chemistry are

needful as interpreters of these successive assemblages of facts; but it does not therefore follow that they are themselves to be placed among these assemblages.

Concrete Science, made up of these five concrete sub-sciences, being thus coherent within itself, and separated from all other science, there comes the question—Is all other science similarly coherent within itself? or is it traversed by some second division that is equally decided? It is thus traversed. A statical or dynamical theorem, however simple, has always for its subject-matter something that is conceived as extended, and as displaying force or forces—as being a seat of resistance, or of tension, or of both, and as capable of possessing more or less of *vis viva*. If we examine the simplest proposition of Statics, we see that the conception of Force must be joined with the conception of Space, before the proposition can be framed in thought; and if we similarly examine the simplest proposition in Dynamics, we see that Force, Space, and Time, are its essential elements. The amounts of the terms are indifferent; and, by reduction of its terms beyond the limits of perception, they are applied to molecules: Molar Mechanics and Molecular Mechanics are continuous. From questions concerning the relative motions of two or more molecules, Molecular Mechanics passes to changes of aggregation among many molecules, to changes in the amounts and kinds of the motions possessed by them as members of an aggregate, and to changes of the motions transferred through aggregates of them (as those constituting light). Daily extending its range of interpretations, it is coming to deal even with the components of each compound molecule on the same principles. And the unions and dis-unions of such more or less compound molecules, which constitute the phenomena of Chemistry, are also being conceived as resultant phenomena of essentially kindred natures—the affinities of molecules for one another, and their reactions in relation to light, heat, and other modes of force,

being regarded as consequent on the combinations of the various mechanically-determined motions of their various components. Without at all out-running, however, this progress in the mechanical interpretation of molecular phenomena, it suffices to point out that the indispensable elements in any chemical conception are units occupying places in space, and exerting forces on one another. This, then, is the common character of all these sciences which we at present group under the names of Mechanics, Physics, Chemistry. Leaving undiscussed the question whether it is possible to conceive of force apart from extended somethings exerting it, we may assert, as beyond dispute, that if the conception of force be expelled, no science of Mechanics, Physics, or Chemistry remains. Made coherent, as these sciences are, by this bond of union, it is impossible to thrust among them any other science without breaking their continuity. We cannot place Logic between Molar Mechanics and Molecular Mechanics. We cannot place Mathematics between the group of propositions concerning the behaviour of homogeneous molecules to one another, and the group of propositions concerning the behaviour of heterogeneous molecules to one another (which we call Chemistry). Clearly these two sciences lie outside the coherent whole we have contemplated: separated from it in some radical way.

By what are they radically separated? By the absence of the conception of force. However true it may be that so long as Logic and Mathematics have any terms at all, these must be capable of affecting consciousness, and, by implication, of exerting force; yet it is the distinctive trait of these sciences that not only do their propositions make no reference to such force, but, as far as possible, they deliberately ignore it. Instead of being, as in all the other sciences, an element that is not only recognized but vital; in Mathematics and Logic, force is an element that is not only not vital, but is studiously not recognized. The terms in

which Logic expresses its propositions, are symbols that do not profess to represent things, properties, or powers, of one kind more than another; and may equally well stand for the attributes belonging to members of some connected series of ideal curves which have never been drawn, as for so many real objects. And the theorems of Geometry, so far from contemplating perceptible lines and surfaces as elements in the truths enunciated, consider these truths as becoming absolute only when such lines and surfaces become ideal—only when the conception of something exercising force is extruded.

Let me now make a second re-statement, not implying acceptance of the doctrine of Evolution, but exhibiting with a clearness almost if not quite as great, these fundamental distinctions.

The concrete sciences, taken together or separately, contemplate as their subject-matters, *aggregates*—either the entire aggregate of sensible existences, or some secondary aggregate separable from this entire aggregate, or some tertiary aggregate separable from this, and so on. Sidercal Astronomy occupies itself with the totality of visible masses distributed through space; which it deals with as made up of identifiable individuals occupying specified places, and severally standing towards one another, towards sub-groups, and towards the entire group, in defined ways. Planetary Astronomy, cutting out of this all-including aggregate that relatively minute part constituting the Solar System, deals with this as a whole—observes, measures, and calculates the sizes, shapes, distances, motions, of its primary, secondary, and tertiary members; and, taking for its larger inquiries the mutual actions of all these members as parts of a co-ordinated assemblage, takes for its smaller inquiries the actions of each member considered as an individual, having a set of intrinsic activities that are modified by a set of

extrinsic activities. Restricting itself to one of these aggregates, which admits of close examination, Geology (using this word in its comprehensive meaning) gives an account of terrestrial actions and terrestrial structures, past and present; and, taking for its narrower problems local formations and the agencies to which they are due, takes for its larger problems the serial transformations undergone by the entire Earth. The geologist being occupied with this cosmically small, but otherwise vast, aggregate, the biologist occupies himself with small aggregates formed out of parts of the Earth's superficial substance, and treats each of these as a coordinated whole in its structures and functions; or, when he treats of any particular organ, considers this as a whole made up of parts held in a sub-coordination that refers to the coordination of the entire organism. To the psychologist he leaves those specialized aggregates of functions which adjust the actions of organisms to the complex activities surrounding them: doing this, not simply because they are a stage higher in speciality, but because they are the counterparts of those aggregated states of consciousness dealt with by the science of Subjective Psychology, which stands entirely apart from all other sciences. Finally, the sociologist considers each tribe and nation as an aggregate presenting multitudinous phenomena, simultaneous and successive, that are held together as parts of one combination. Thus, in every case, a concrete science deals with a real aggregate (or a plurality of such aggregates); and it includes as its subject-matter whatever is to be known of this aggregate in respect of its size, shape, motions, density, texture, general arrangement of parts, minute structure, chemical composition, temperature, etc., together with all the multitudinous changes, material and dynamical, gone through by it from the time it begins to exist as an aggregate to the time it ceases to exist as an aggregate.

No abstract-concrete science makes the remotest attempt

to do anything of this sort. Taken together, the abstract-concrete sciences give an account of the various kinds of *properties* which aggregates display; and each abstract-concrete science concerns itself with a certain order of these properties. By this, the properties common to all aggregates are studied and formulated; by that, the properties of aggregates having special forms, special states of aggregation, etc.; and by others, the properties of particular components of aggregates when dissociated from other components. But by all these sciences the aggregate, considered as an individual object, is tacitly ignored; and a property, or a connected set of properties, exclusively occupies attention. It matters not to Mechanics whether the moving mass it considers is a planet or a molecule, a dead stick thrown into the river or the living dog that leaps after it: in any case the curve described by the moving mass conforms to the same laws. Similarly when the physicist takes for his subject the relation between the changing bulk of matter and the changing quantity of molecular motion it contains. Dealing with the subject generally, he leaves out of consideration the kind of matter; and dealing with the subject specially in relation to this or that kind of matter, he ignores the attributes of size and form: save in the still more special cases where the effect on form is considered, and even then size is ignored. So, too, is it with the chemist. A substance he is investigating, never thought of by him as distinguished in extension or amount, is not even required to be perceptible. A portion of carbon on which he is experimenting, may or may not have been visible under its forms of diamond or graphite or charcoal—this is indifferent. He traces it through various disguises and various combinations—now as united with oxygen to form an invisible gas; now as hidden with other elements in such more complex compounds as ether, and sugar, and oil. By sulphuric acid or other agent he precipitates it from these

as a coherent cinder, or as a diffused impalpable powder; and again, by applying heat, forces it to disclose itself as an element of animal tissue. Evidently, while thus ascertaining the affinities and atomic equivalence of carbon, the chemist has nothing to do with any aggregate. He deals with carbon in the abstract, as something considered apart from quantity, form, appearance, or temporary state of combination; and conceives it as the possessor of powers or properties, whence the special phenomena he describes result: the ascertaining of all these powers or properties being his sole aim.

Finally, the Abstract Sciences ignore alike aggregates and the powers which aggregates or their components possess; and occupy themselves with *relations*—either with the relations among aggregates, or among their parts, or the relations among aggregates and properties, or the relations among properties, or the relations among relations. The same logical formula applies equally well, whether its terms are men and their deaths, crystals and their planes of cleavage, or letters and their sounds. And how entirely Mathematics concerns itself with relations, we see on remembering that it has just the same expression for the characters of an infinitesimal triangle, as for those of the triangle which has Sirius for its apex and the diameter of the Earth's orbit for its base.

I cannot see how these definitions of these groups of sciences can be questioned. It is undeniable that every Concrete Science gives an account of an aggregate or of aggregates, inorganic, organic, or super-organic (a society); and that, not concerning itself with properties of this or that order, it concerns itself with the co-ordination of the assembled properties of all orders. It seems to me no less certain that an Abstract-Concrete Science gives an account of some order of properties, general or special; not caring about the other traits of an aggregate displaying them, and not

recognizing aggregates at all further than is implied by discussion of the particular order of properties. And I think it is equally clear that an Abstract Science, freeing its propositions, so far as the nature of thought permits, from aggregates and properties, occupies itself with the relations of co-existence and sequence, as disentangled from all particular forms of being and action. If then these three groups of sciences are, respectively, accounts of *aggregates*, accounts of *properties*, accounts of *relations*, it is manifest that the divisions between them are not simply perfectly clear, but that the chasms between them are absolute.

Here, perhaps more clearly than before, will be seen the untenability of the classification made by M. Comte. Already (p. 11), after setting forth in a general way these fundamental distinctions, I have pointed out the incongruities that arise when the sciences, conceived as Abstract, Abstract-Concrete, and Concrete, are arranged in the order proposed by him. Such incongruities become still more conspicuous if for these general names of the groups we substitute the definitions given above. The series will then stand thus:—

MATHEMATICS	An account of <i>relations</i> (including, under Mechanics, an account of <i>properties</i>).
ASTRONOMY	An account of <i>aggregates</i> .
PHYSICS	An account of <i>properties</i> .
CHEMISTRY	An account of <i>properties</i> .
BIOLOGY	An account of <i>aggregates</i> .
SOCIOLOGY	An account of <i>aggregates</i> .

That those who espouse opposite views see clearly the defects in the propositions of their opponents and not those in their own, is a trite remark that holds in philosophical discussions as in all others: the parable of the mote and

the beam applies as well to men's appreciations of one another's opinions as to their appreciations of one another's natures. Possibly to my positivist friends I exemplify this truth,—just as they exemplify it to me. Those uncommitted to either view must decide where the mote exists and where the beam. Meanwhile it is clear that one or other of the two views is essentially erroneous; and that no qualifications can bring them into harmony. Either the sciences admit of no such grouping as that which I have described, or they admit of no such serial order as that given by M. Comte.

LONDON,
February, 1871.

II.

REASONS FOR DISSENTING FROM THE PHILOSOPHY OF M. COMTE.

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FROM THE

PHILOSOPHY OF M. COMTE.

WHILE the preceding pages were passing through the press, there appeared in the *Revue des Deux Mondes* for February 15th, an article on a late work of mine—*First Principles*. To M. Augusto Laugel, the writer of this article, I am much indebted for the careful exposition he has made of some of the leading views set forth in that work; and for the catholic and sympathetic spirit in which he has dealt with them. In one respect, however, M. Laugel conveys to his readers an erroneous impression—an impression doubtless derived from what appears to him adequate evidence, and doubtless expressed in perfect sincerity. M. Laugel describes me as being, in part, a follower of M. Comte. After describing the influence of M. Comte as traceable in the works of some other English writers, naming especially Mr. Mill and Mr. Buckle, he goes on to say that this influence, though not avowed, is easily recognizable in the work he is about to make known; and in several places throughout his review, there are remarks having the same implication. I greatly regret having to take exception to anything said by a critic so candid and so able. But the *Revue des Deux Mondes* circulates widely in England, as well as elsewhere; and finding that there exists in some minds, both here and in America, an impression similar to that entertained by M. Laugel—an impression likely to be confirmed by his statement—it appears to me needful to meet it.

Two causes of quite different kinds, have conspired to diffuse the erroneous belief that M. Comte is an accepted exponent of scientific opinion. His bitterest foes and his closest friends, have unconsciously joined in propagating it. On the one hand, M. Comte having designated by the term "Positive Philosophy" all that definitely-established knowledge which men of science have been gradually organizing into a coherent body of doctrine; and having habitually placed this in opposition to the incoherent body of doctrine defended by theologians; it has become the habit of the theological party to think of the antagonist scientific party, under the title of "positivists." And thus, from the habit of calling them "positivists," there has grown up the assumption that they call themselves "positivists," and that they are the disciples of M. Comte. On the other hand, those who have accepted M. Comte's system, and believe it to be the philosophy of the future, have naturally been prone to see everywhere the signs of its progress; and wherever they have found opinions in harmony with it, have ascribed these opinions to the influence of its originator. It is always the tendency of discipleship to magnify the effects of the master's teachings; and to credit the master with all the doctrines he teaches. In the minds of his followers, M. Comte's name is associated with scientific thinking, which, in many cases, they first understood from his exposition of it. Influenced as they inevitably are by this association of ideas, they are reminded of M. Comte wherever they meet with thinking which corresponds, in some marked way, to M. Comte's description of scientific thinking; and hence are apt to imagine him as introducing into other minds, the conceptions which he introduced into their minds. Such impressions are, however, in most cases quite unwarranted. That M. Comte has given a general exposition of the doctrine and method elaborated by Science, is true. But it is not true that the holders of this doctrine and followers of this method,

are disciples of M. Comte. Neither their modes of inquiry nor their views concerning human knowledge in its nature and limits, are appreciably different from what they were before. If they are "positivists," it is in the sense that all men of science have been more or less consistently "positivists;" and the applicability of M. Comte's title to them, no more makes them his disciples, than does its applicability to men of science who lived and died before M. Comte wrote, make these his disciples. M. Comte himself by no means claims that which some of his adherents are apt, by implication, to claim for him. He says:—"Il y a, sans doute, beaucoup d'analogie entre ma *philosophie positive* et ce que les savans anglais entendent, depuis Newton surtout, par *philosophie naturelle*;" (see *Avertissement*) and further on he indicates the "grand mouvement imprimé à l'esprit humain, il y a deux siècles, par l'action combinée des préceptes de Bacon, des conceptions de Descartes, et des découvertes de Galiléé, comme le moment où l'esprit de la philosophie positive a commencé à se prononcer dans le monde." That is to say, the general mode of thought and way of interpreting phenomena, which M. Comte calls "Positive Philosophy," he recognizes as having been growing for two centuries; as having reached, when he wrote, a marked development; and as being the heritage of all men of science.

That which M. Comte proposed to do, was to give scientific thought and method a more definite embodiment and organization; and to apply it to the interpretation of classes of phenomena not previously dealt with in a scientific manner. The conception was a great one; and the endeavour to work it out was worthy of sympathy and applause. Some such conception was entertained by Bacon. He, too, aimed at the organization of the sciences; he, too, held that "Physics is the mother of all the sciences;" he, too, held that the sciences can be advanced only by combining them,

and saw the nature of the required combination; he, too, held that moral and civil philosophy could not flourish when separated from their roots in natural philosophy; and thus he, too, had some idea of a social science growing out of physical science. But the state of knowledge in his day prevented any advance beyond the general conception: indeed, it was marvellous that he should have advanced so far. Instead of a vague, undefined conception, M. Comte has presented the world with a defined and highly-elaborated conception. In working out this conception he has shown remarkable breadth of view, great originality, immense fertility of thought, unusual powers of generalization. Considered apart from the question of its truth, his system of Positive Philosophy is a vast achievement. But after according to M. Comte high admiration for his conception, for his effort to realize it, and for the faculty he has shown in the effort to realize it, there remains the inquiry—Has he succeeded? A thinker who re-organizes the scientific method and knowledge of his age, and whose re-organization is accepted by his successors, may rightly be said to have such successors for his disciples. But successors who accept this method and knowledge of his age, *minus* his re-organization, are certainly not his disciples. How then stands the case with M. Comte? There are some few who receive his doctrines with but little reservation; and these are his disciples truly so called. There are others who regard with approval certain of his leading doctrines, but not the rest: these we may distinguish as partial adherents. There are others who reject all his distinctive doctrines; and these must be classed as his antagonists. The members of this class stand substantially in the same position as they would have done had he not written. Declining his re-organization of scientific doctrine, they possess this scientific doctrine in its pre-existing state, as the common heritage bequeathed by the past to the present; and their adhesion to

this scientific doctrine in no sense implicates them with M. Comte. In this class stand the great body of men of science. And in this class I stand myself.

Coming thus to the personal part of the question, let me first specify those great general principles on which M. Comte is at one with preceding thinkers: and on which I am at one with M. Comte.

All knowledge is from experience, holds M. Comte; and this I also hold—hold it, indeed, in a wider sense than M. Comte: since, not only do I believe that all the ideas acquired by individuals, and consequently all the ideas transmitted by past generations, are thus derived; but I also contend that the very faculties by which they are acquired, are the products of accumulated and organized experiences received by ancestral races of beings (see *Principles of Psychology*). But the doctrine that all knowledge is from experience, is not originated by M. Comte; nor is it claimed by him. He himself says—“Tous les bons esprits répètent, depuis Bacon, qu’il n’y a de connaissances réelle que celles qui reposent sur des faits observés.” And the elaboration and definite establishment of this doctrine, has been the special characteristic of the English school of Psychology. Nor am I aware that M. Comte, accepting this doctrine, has done anything to make it more certain, or give it greater definiteness. Indeed it was impossible for him to do so; since he repudiates that part of mental science by which alone this doctrine can be proved.

It is a further belief of M. Comte, that all knowledge is phenomenal or relative; and in this belief I entirely agree. But no one alleges that the relativity of all knowledge was first enunciated by M. Comte. Among others who have more or less consistently held this truth, Sir William Hamilton enumerates, Protagoras, Aristotle, St. Augustin, Boethius, Averroes, Albertus Magnus, Gerson, Leo Hebraeus, Melancthon, Scaliger, Francis Piccolomini, Giordano Bruno, Cam-

panella, Bacon, Spinoza, Newton, Kant. And Sir William Hamilton, in his "Philosophy of the Unconditioned," first published in 1829, has given a scientific demonstration of this belief. Receiving it in common with other thinkers, from preceding thinkers, M. Comte has not, to my knowledge, advanced this belief. Nor indeed could he advance it, for the reason already given—he denies the possibility of that analysis of thought which discloses the relativity of all cognition.

M. Comte reprobates the interpretation of different classes of phenomena by assigning metaphysical entities as their causes; and I coincide in the opinion that the assumption of such separate entities, though convenient, if not indeed necessary, for purposes of thought, is, scientifically considered, illegitimate. This opinion is, in fact, a corollary from the last; and must stand or fall with it. But like the last it has been held with more or less consistency for generations. M. Comte himself quotes Newton's favorite saying—"O! Physics, beware of Metaphysics!" Neither to this doctrine, any more than to the preceding doctrines, has M. Comte given a firmer basis. He has simply re-asserted it; and it was out of the question for him to do more. In this case, as in the others, his denial of subjective psychology debarred him from proving that these metaphysical entities are mere symbolic conceptions which do not admit of verification.

Lastly, M. Comte believes in invariable natural laws—absolute uniformities of relation among phenomena. But very many before him have believed in them too. Long familiar even beyond the bounds of the scientific world, the proposition that there is an unchanging order in things, has, within the scientific world, held, for generations, the position of an established postulate: by some men of science recognized only as holding of inorganic phenomena; but recognized by other men of science, as universal. And M. Comte, accepting this doctrine from the past, has left it substantially

as it was. Though he has asserted new uniformities, I do not think scientific men will admit that he has so *demonstrated* them, as to make the induction more certain; nor has he deductively established the doctrine, by showing that uniformity of relation is a necessary corollary from the persistence of force, as may readily be shown.

These, then, are the pre-established general truths with which M. Comte sets out—truths which cannot be regarded as distinctive of his philosophy. “But why,” it will perhaps be asked, “is it needful to point out this; seeing that no instructed reader supposes these truths to be peculiar to M. Comte?” I reply that though no disciple of M. Comte would deliberately claim them for him; and though no theological antagonist at all familiar with science and philosophy, supposes M. Comte to be the first propounder of them; yet there is so strong a tendency to associate any doctrines with the name of a conspicuous recent exponent of them, that false impressions are produced, even in spite of better knowledge. Of the need for making this reclamation, definite proof is at hand. In the No. of the *Revue des Deux Mondes* named at the commencement, may be found, on p. 936, the words—“Toute religion, comme toute philosophie, a la prétention de donner une explication de l’univers. La philosophie qui s’appelle *positive* se distingue de toutes les philosophies et de toutes les religions en ce qu’elle a renoncé à cette ambition de l’esprit humain;” and the remainder of the paragraph is devoted to explaining the doctrine of the relativity of knowledge. The next paragraph begins—“Tout imbu de ces idées, que nous exposons sans les discuter pour le moment, M. Spencer divise, etc.” Now this is one of those collocations of ideas which tends to create, or to strengthen, the erroneous impression I would dissipate. I do not for a moment suppose that M. Laugel intended to say that these ideas which he describes as ideas of the “Positive Philosophy,” are peculiarly the ideas of M. Comte. But

little as he probably intended it, his expressions suggest this conception. In the minds of both disciples and antagonists, "the Positive Philosophy" means the philosophy of M. Comte; and to be imbued with the ideas of "the Positive Philosophy" means to be imbued with the ideas of M. Comte—to have received these ideas from M. Comte. After what has been said above, I need scarcely repeat that the conception thus inadvertently suggested, is a wrong one. M. Comte's brief enunciations of these general truths, gave me no clearer apprehensions of them than I had before. Such clarifications of ideas on these ultimate questions, as I can trace to any particular teacher, I owe to Sir William Hamilton

From the principles which M. Comte held in common with many preceding and contemporary thinkers, let us pass now to the principles that are distinctive of his system. Just as entirely as I agree with M. Comte on those cardinal doctrines which we jointly inherit; so entirely do I disagree with him on those cardinal doctrines which he propounds, and which determine the organization of his philosophy. The best way of showing this will be to compare, side by side, the—

*Propositions held by
M. Comte.*

"...chacune de nos conceptions principales, chaque branche de nos connaissances, passe successivement par trois états théoriques différens: l'état théologique, ou fictif; l'état métaphysique, ou abstrait; l'état scientifique, ou positif. En d'autres termes, l'esprit humain, par sa nature, emploie successivement dans chacune de ses recherches trois méthodes de philoso-

Propositions which I hold.

The progress of our conceptions, and of each branch of knowledge, is from beginning to end intrinsically alike. There are not three methods of philosophizing radically opposed; but one method of philosophizing which remains, in essence, the same. At first, and to the last, the conceived causal agencies of phenomena, have a degree of generality corresponding to the width of the generalizations which experiences have determined; and they change just as gradually as experiences accumulate. The into-

pher, dont le caractère est essentiellement différent et même radicalement opposé : d'abord la méthode théologique, ensuite la méthode métaphysique, et enfin la méthode positive." p. 3.

gration of causal agencies, originally thought of as multitudinous and local, but finally believed to be one and universal, is a process which involves the passing through all intermediate steps between these extremes; and any appearance of stages can be but superficial. Supposed concrete and individual causal agencies, coalesce in the mind as fast as groups of phenomena are assimilated, or seen to be similarly caused. Along with their coalescence, comes a greater extension of their individualities, and a concomitant loss of distinctness in their individualities. Gradually, by continuance of such coalescences, causal agencies become, in thought, diffused and indefinite. And eventually, without any change in the nature of the process, there is reached the consciousness of a universal causal agency, which cannot be conceived.*

'Le système théologique est parvenu à la plus haute perfection dont il soit susceptible, quand il a substitué l'action providentielle d'un être unique au jeu varié des nombreuses divinités indépendantes qui avaient été imaginées primitivement. De même, le dernier terme du système métaphysique consiste à concevoir, au lieu des différentes entités particulières,

As the progress of thought is one, so is the end one. There are not three possible terminal conceptions; but only a single terminal conception. When the theological idea of the providential action of one being, is developed to its ultimate form, by the absorption of all independent secondary agencies, it becomes the conception of a being immanent in all phenomena; and the reduction of it to this state, implies the fading-away, in thought, of all those anthropomorphic attributes by which the aboriginal

* A clear illustration of this process, is furnished by the recent mental integration of Heat, Light, Electricity, etc., as modes of molecular motion. If we go a step back, we see that the modern conception of Electricity, resulted from the integration in consciousness, of the two forms of it evolved in the galvanic battery and in the electric-machine. And going back to a still earlier stage, we see how the conception of statical electricity, arose by the coalescence in thought, of the previously-separate forces manifested in rubbed amber, in rubbed glass, and in lightning. With such illustrations before him, no one can, I think, doubt that the process has been the same from the beginning.

une seule grande entité générale, la *nature*, envisagée comme la source unique de tous les phénomènes. Pareillement, la perfection du système positif, vers laquelle il tend sans cesse, quoiqu'il soit très-probable qu'il ne doive jamais l'atteindre, serait de pouvoir se représenter tous les divers phénomènes observables comme des cas particuliers d'un seul fait général, tel que celui de la gravitation, par exemple." p. 5.

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idea was distinguished. The alleged last term of the metaphysical system—the conception of a single great general entity, *nature*, as the source of all phenomena—is a conception identical with the previous one: the consciousness of a single source which, in coming to be regarded as universal, ceases to be regarded as conceivable, differs in nothing but name from the consciousness of one being, manifested in all phenomena. And similarly, that which is described as the ideal state of science—the power to represent all observable phenomena as particular cases of a single general fact, implies the postulating of some ultimate existence of which this single fact is alleged; and the postulating of this ultimate existence, involves a state of consciousness indistinguishable from the other two.

Though along with the extension of generalizations, and concomitant integration of conceived causal agencies, the conceptions of causal agencies grow more indefinite; and though as they gradually coalesce into a universal causal agency, they cease to be representable in thought, and are no longer supposed to be comprehensible; yet the consciousness of *cause* remains as dominant to the last as it was at first; and can never be got rid of. The consciousness of cause can be abolished only by abolishing consciousness itself.* (*First Principles*, § 26.)

* Possibly it will be said that M. Comte himself admits, that what he calls the perfection of the positive system, will probably never be reached; and that what he condemns is the inquiry into the *natures* of causes and not the general recognition of cause. To the first of these allegations, I reply that, as I understand M. Comte, the obstacle to the perfect realization of the positive philosophy is the impossibility of carrying generalization so far as to reduce all particular facts to

‘Ce n’est pas aux lecteurs de cet ouvrage que je croirai jamais devoir prouver que les idées gouvernent et bouleversent le monde, ou, en d’autres termes, que tout le mécanisme social repose finalement sur des opinions. Ils savent surtout que la grande crise politique et morale des sociétés actuelles tient, en dernière analyse, à l’anarchie intellectuelle.’ p. 48.*

Ideas do not govern and overthrow the world: the world is governed or overthrown by feelings, to which ideas serve only as guides. The social mechanism does not rest finally upon opinions; but almost wholly upon character. Not intellectual anarchy, but moral antagonism, is the cause of political crises. All social phenomena are produced by the totality of human emotions and beliefs: of which the emotions are mainly pre-determined, while the beliefs are mainly post-determined. Men’s desires are chiefly inherited; but their beliefs are chiefly acquired, and depend on surrounding conditions; and the most important surrounding conditions depend on the social state which the prevalent desires have produced. The social state at any time existing, is the resultant of all the ambitions, self-interests, fears, reverences, indignations, sympathies, etc., of ancestral citizens and existing citizens. The ideas current in this social state, must, on the average, be congruous with the feelings of citizens; and therefore, on the average, with the social state these feelings have pro-

duced of one general fact—not the impossibility of excluding the consciousness of cause. And to the second allegation I reply, that the essential principle of his philosophy, is an avowed ignoring of cause altogether. For if it is not, *what becomes of his alleged distinction between the perfection of the positive system and the perfection of the metaphysical system?* And here let me point out that, by affirming exactly the opposite to that which M. Comte thus affirms, I am excluded from the positive school. If his own definition of positivism is to be taken, then, as I hold that what he defines as positivism is an absolute impossibility, it is clear that I cannot be what he calls a positivist.

* A friendly critic alleges that M. Comte is not fairly represented by this quotation, and that he is blamed by his biographer, M. Littré, for his too-great insistence on feeling as a motor of humanity. If in his “Positive Politics,” which I presume is here referred to, M. Comte abandons his original position, so much the better. But I am here dealing with what is known as “the Positive Philosophy;” and that the passage above quoted does not misrepresent it, is proved by the fact that this doctrine is re-asserted at the commencement of the Sociology.

duced. Ideas wholly foreign to this social state cannot be evolved, and if introduced from without, cannot get accepted—or, if accepted, die out when the temporary phase of feeling which caused their acceptance, ends. Hence, though advanced ideas when once established, act upon society and aid its further advance; yet the establishment of such ideas depends on the fitness of the society for receiving them. Practically, the popular character and the social state, determine what ideas shall be current; instead of the current ideas determining the social state and the character. The modification of men's moral natures, caused by the continuous discipline of social life, which adapts them more and more to social relations, is therefore the chief proximate cause of social progress. (*Social Statics*, chap. xxx.)

"...Je ne dois pas négliger d'indiquer d'avance, comme une propriété essentielle de l'échelle encyclopédique que je vais proposer, sa conformité générale avec l'ensemble de l'histoire scientifique; en ce sens, que, malgré la simultanéité réelle et continue du développement des différentes sciences, celles qui seront classées comme antérieures seront, en effet, plus anciennes et constamment plus avancées que celles présentées comme postérieures." p. 84.
 "Cet ordre est déterminé par le degré de simplicité, ou, ce qui revient au même, par le degré de généralité des phénomènes." p. 87.

The order in which the generalizations of science are established, is determined by the frequency and impressiveness with which different classes of relations are repeated in conscious experience; and this depends, partly on *the directness with which personal welfare is affected*; partly on *the conspicuousness of one or both the phenomena between which a relation is to be perceived*; partly on *the absolute frequency with which the relations occur*; partly on *their relative frequency of occurrence*; partly on *their degree of simplicity*; and partly on *their degree of abstractness*. (*First Principles*, 1st ed., § 36; appended to this pamphlet.)

"En résultat définitif, la mathématique, l'astronomie, la physique, la chimie, la physiologie, et la physique sociale; telle est la formule encyclopédique qui, parmi le très-grand nombre de classifications que comportent les six sciences fondamentales, est seule logiquement conforme à la hiérarchie naturelle et invariable des phénomènes." p. 115.

"On conçoit, en effet, que l'étude rationnelle de chaque science fondamentale exigeant la culture préalable de toutes celles qui la précèdent dans notre hiérarchie encyclopédique, n'a pu faire de progrès réels et prendre son véritable caractère, qu'après un grand développement des sciences antérieures relatives à des phénomènes plus généraux, plus abstraits, moins compliqués, et indépendans des autres. C'est donc dans cet ordre que la progression, quoique simultanée, a dû avoir lieu." p. 100.

The sciences as arranged in this succession specified by M. Comte, *do not* logically conform to the natural and invariable hierarchy of phenomena; and there is no serial order whatever in which they can be placed, which represents either their logical dependence or the dependence of phenomena. (See *Genesis of Science*, and foregoing Essay.)

The historical development of the sciences *has not* taken place in this serial order; nor in any other serial order. There is no "true *filiation* of the sciences." From the beginning, the abstract sciences, the abstract-concrete sciences, and the concrete sciences, have progressed together: the first solving problems which the second and third presented, and growing only by the solution of the problems; and the second similarly growing by joining the first in solving the problems of the third. All along there has been a continuous action and reaction between the three great classes of sciences—an advance from concrete facts to abstract facts, and then an application of such abstract facts to the analysis of new orders of concrete facts. (See *Genesis of Science*.)

Such then are the organizing principles of M. Comte's philosophy. Leaving out of his "*Exposition*" those pre-established general doctrines which are the common property of modern thinkers; these are the general doctrines which remain—these are the doctrines which fundamentally distinguish his system. From every one of them I dissent. To each proposition I oppose either a widely-different pro-

position, or a direct negation; and I not only do it now, but have done it from the time when I became acquainted with his writings. This rejection of his cardinal principles should, I think, alone suffice; but there are sundry other views of his, some of them largely characterizing his system, which I equally reject. Let us glance at them.

How organic beings have originated, is an inquiry which M. Comte deprecates as a useless speculation: asserting, as he does, that species are immutable.

This inquiry, I believe, admits of answer, and will be answered. That division of Biology which concerns itself with the origin of species, I hold to be the supreme division, to which all others are subsidiary. For on the verdict of Biology on this matter, must wholly depend our conception of human nature, past, present, and future; our theory of the mind; and our theory of society.

M. Comte contends that of what is commonly known as mental science, all that most important part which consists of the subjective analysis of our ideas, is an impossibility.

I have very emphatically expressed my belief in a subjective science of the mind, by writing a *Principles of Psychology*, one half of which is subjective.

M. Comte's ideal of society is one in which *government* is developed to the greatest extent—in which class-functions are far more under conscious public regulation than now—in which hierarchical organization with unquestioned authority shall guide everything—in which the individual life shall be subordinated in the greatest degree to the social life.

That form of society towards which we are progressing, I hold to be one in which *government* will be reduced to the smallest amount possible, and *freedom* increased to the greatest amount possible—one in which human nature will have become so moulded by social discipline into fitness for the social state, that it will need little external restraint, but will be self-restrained—one in which the citizen will tolerate no interference with his freedom, save that which maintains the equal freedom of others—one in which the spontaneous co-operation which has developed our industrial system, and is now develop-

ing it with increasing rapidity, will produce agencies for the discharge of nearly all social functions, and will leave to the primary governmental agency nothing beyond the function of maintaining those conditions to free action, which make such spontaneous co-operation possible—one in which individual life will thus be pushed to the greatest extent consistent with social life; and in which social life will have no other end than to maintain the completest sphere for individual life.

M. Comte, not including in his philosophy the consciousness of a cause manifested to us in all phenomena, and yet holding that there must be a religion, which must have an object, takes for his object—Humanity. "This Collective Life (of Society) is in Comte's system the *Être Suprême*; the only one we can know, therefore the only one we can worship."

I conceive, on the other hand, that the object of religious sentiment will ever continue to be, that which it has ever been—the unknown source of things. While the *forms* under which men are conscious of the unknown source of things, may fade away, the *substance* of the consciousness is permanent. Beginning with causal agents conceived as imperfectly known; progressing to causal agents conceived as less known and less knowable; and coming at last to a universal causal agent posited as not to be known at all; the religious sentiment must ever continue to occupy itself with this universal causal agent. Having in the course of evolution, come to have for its object of contemplation, the Infinite Unknowable, the religious sentiment can never again (unless by retrogression) take a Finite Knowable, like Humanity, for its object of contemplation.

Here, then, are sundry other points, all of them important, and the last two supremely important, on which I am diametrically opposed to M. Comte; and did space permit, I could add many others. Radically differing from him as I thus do, in everything distinctive of his philosophy; and

having invariably expressed my dissent, publicly and privately, from the time I became acquainted with his writings; it may be imagined that I have been not a little startled to find myself classed as one of the same school. That those who have read *First Principles* only, may have been betrayed into this error in the way above shown, by the ambiguous use of the phrase "Positive Philosophy," I can understand. But that any who are acquainted with my previous writings, should suppose I have any general sympathy with M. Comte, save that implied by preferring proved facts to superstitions, astonishes me.

It is true that, disagreeing with M. Comte, though I do, in all those fundamental views that are peculiar to him, I agree with him in sundry minor views. The doctrine that the education of the individual should accord in mode and arrangement with the education of mankind, considered historically, I have cited from him; and have endeavoured to enforce it. I entirely concur in his opinion that there requires a new order of scientific men, whose function shall be that of co-ordinating the results arrived at by the rest. To him I believe I am indebted for the conception of a social *consensus*; and when the time comes for dealing with this conception, I shall state my indebtedness. And I also adopt his word, Sociology. There are, I believe, in the part of his writings which I have read, various incidental thoughts of great depth and value; and I doubt not that were I to read more of his writings, I should find many others.* It is very probable, too, that I have said (as I am told I have) some things which M. Comte had already said. It would be difficult, I believe, to find any two men who had no opinions in common. And it would be extremely strange if two men,

* M. Comte's "Exposition" I read in the original in 1853; and in two or three other places have referred to the original to get his exact words. The Inorganic Physics, and the first chapter of the Biology, I read in Miss Martineau's condensed translation, when it appeared. The rest of M. Comte's views I know only through Mr. Lewes's outline, and through incidental references.

starting from the same general doctrines established by modern science, should traverse some of the same fields of inquiry, without their lines of thought having any points of intersection. But none of these minor agreements can be of much weight in comparison with the fundamental disagreements above specified. Leaving out of view that general community which we both have with the scientific thought of the age, the differences between us are essential, while the correspondences are non-essential. And I venture to think that kinship must be determined by essentials, and not by non-essentials.*

Joined with the ambiguous use of the phrase "Positive Philosophy," which has led to a classing with M. Comte of many men who either ignore or reject his distinctive principles, there has been one special circumstance that has tended to originate and maintain this classing in my own case. The assumption of some relationship between M. Comte and myself, was unavoidably raised by the title of my first book—*Social Statics*. When that book was published, I was unaware that this title had been before used: had I known the fact, I should certainly have adopted an alternative title which I had in view.† If, however, instead of the title,

* In his recent work, *Auguste Comte et la Philosophie Positive*, M. Littré, defending the Comtean classification of the sciences from the criticism I made upon it in the "Genesis of Science," deals with me wholly as an antagonist. The chapter he devotes to his reply, opens by placing me in direct antithesis to the English adherents of Comte, named in the preceding chapter.

† I believed at the time, and have never doubted until now, that the choice of this title was absolutely independent of its previous use by M. Comte. While writing these pages, I have found reason to think the contrary. On referring to *Social Statics*, to see what were my views of social evolution in 1850, when M. Comte was to me but a name, I met with the following sentence:—"Social philosophy may be aptly divided (as political economy has been) into statics and dynamics." (p. 409). This I remembered to be a reference to a division which I had seen in the Political Economy of Mr. Mill. But why had I not mentioned Mr. Mill's name? On referring to the first edition of his work, I found, at the opening of Book iv., this sentence:—"The three preceding parts include as detailed a view as the limits of this treatise permit, of what, by a happy generalization of a mathematical phrase, has been called the Statics of the subject." Here was the solution of the question. The division had not been made by Mr. Mill, but by some writer (on Political Economy I supposed) who was not named by him; and whom I did not know. It is now manifest, however, that while I supposed I was giving a more extended use to this division, I was but returning to the original use

the work itself be considered, its irrelation to the philosophy of M. Comte, becomes abundantly manifest. There is decisive testimony on this point. In the *North British Review* for August, 1851, a reviewer of *Social Statics* says—

“The title of this work, however, is a complete misnomer. According to all analogy, the phrase “Social Statics” should be used only in some such sense as that in which, as we have already explained, it is used by Comte, namely as designating a branch of inquiry whose end it is to ascertain the laws of social equilibrium or order, as distinct ideally from those of social movement or progress. Of this Mr. Spencer does not seem to have had the slightest notion, but to have chosen the name for his work only as a means of indicating vaguely that it proposed to treat of social concerns in a scientific manner.” p. 321.

Respecting M. Comte’s application of the words *statics* and *dynamics* to social phenomena, now that I know what it is, I will only say that while I perfectly understand how, by a defensible extension of their mathematical meanings, the one may be used to indicate social *functions in balance*, and the other social *functions out of balance*, I am quite at a loss to understand how the phenomena of *structure* can be included in the one any more than in the other. But the two things which here concern me, are, first, to point out that I had not “the slightest notion” of giving Social Statics the meaning which M. Comte gave it; and, second, to explain the meaning which I did give it. The units of any aggregate of matter, are in equilibrium when they severally act and re-act upon each other on all sides with equal forces. A state of change among them implies that there are forces exercised by some that are not counterbalanced by like forces exercised by others; and a state of rest implies the absence of such uncounterbalanced forces—implies, if the units are homogeneous, equal distances among them—implies a maintenance of their respective spheres of molecular

which Mr. Mill had limited to his special topic. Another thing is, I think, tolerably manifest. As I evidently wished to point out my obligation to some unknown political economist, whose division I thought I was extending, I should have named him had I known who he was. And in that case should not have put this extension of the division as though it were new

motion. Similarly among the units of a society, the fundamental condition to equilibrium, is, that the restraining forces which the units exercise on each other, shall be balanced. If the spheres of action of some units are diminished by extension of the spheres of action of others, there necessarily results an unbalanced force which tends to produce political change in the relations of individuals; and the tendency to change can cease, only when individuals cease to aggress on each other's spheres of action—only when there is maintained that law of equal freedom, which it was the purpose of *Social Statics* to enforce in all its consequences. Besides this totally-unlike conception of what constitutes Social Statics, the work to which I applied that title, is fundamentally at variance with M. Comte's teachings in almost everything. So far from alleging, as M. Comte does, that society is to be re-organized by philosophy; it alleges that society is to be re-organized only by the accumulated effects of habit on character. Its aim is not the increase of authoritative control over citizens, but the decrease of it. A more pronounced individualism, instead of a more pronounced nationalism, is its ideal. So profoundly is my political creed at variance with the creed of M. Comte, that, unless I am misinformed, it has been instanced by a leading English disciple of M. Comte, as the creed to which he has the greatest aversion. One point of coincidence, however, is recognizable. The analogy between an individual organism and a social organism, which was held by Plato and by Hobbes, is asserted in *Social Statics*, as it is in the *Sociology* of M. Comte. Very rightly, M. Comte has made this analogy the cardinal idea of this division of his philosophy. In *Social Statics*, the aim of which is essentially ethical, this analogy is pointed out incidentally, to enforce certain ethical considerations; and is there obviously suggested partly by the definition of life which Coleridge derived from Schelling, and partly by the generalizations of physiologists there referred to (chap. xxx. §§. 12, 13, 16). Excepting

this incidental agreement, however, the contents of *Social Statics* are so wholly antagonistic to the philosophy of M. Comte, that, but for the title, the work would never, I think, have raised the remembrance of him—unless, indeed, by the association of opposites.*

And now let me point out that which really *has* exercised a profound influence over my course of thought. The truth which Harvey's embryological inquiries first dimly indicated, which was afterwards more clearly perceived by Wolff, and which was put into a definite shape by Von Baer—the truth that all organic development is a change from a state of homogeneity to a state of heterogeneity—this it is from which very many of the conclusions which I now hold, have indirectly resulted. In *Social Statics*, there is everywhere manifested a dominant belief in the evolution of man and of society. There is also manifested the belief that this evolution is in both cases determined by the incidence of conditions—the actions of circumstances. And there is further, in the sections above referred to, a recognition of the fact that organic and social evolutions, conform to the same law. Falling amid beliefs in evolutions of various orders, everywhere determined by natural causes (beliefs again displayed in the *Theory of Population* and in the *Principles of Psychology*); the formula of Von Baer acted as an organizing principle. The extension of it to other kinds of phenomena than those of individual and social organiza-

* Let me add that the conception developed in *Social Statics*, dates back to a series of letters on the "Proper Sphere of Government," published in the *Nonconformist* newspaper, in the latter half of 1842, and republished as a pamphlet in 1843. In these letters will be found, along with many crude ideas, the same belief in the conformity of social phenomena to unvariable laws; the same belief in human progression as determined by such laws; the same belief in the moral modification of men as caused by social discipline; the same belief in the tendency of social arrangements "of themselves to assume a condition of *stable equilibrium*;" the same repudiation of state-control over various departments of social life; the same limitation of state-action to the maintenance of equitable relations among citizens. The writing of *Social Statics* arose from a dissatisfaction with the basis on which the doctrines set forth in those letters were placed: the second half of that work is an elaboration of these doctrines; and the first half a statement of the principles from which they are deducible.

tion, is traceable through successive stages. It may be seen in the last paragraph of an essay on "The Philosophy of Style," published in October, 1852; again in an essay on "Manners and Fashion," published in April, 1854; and then, in a comparatively advanced form, in an essay on "Progress: its Law and Cause," published in April, 1857. Afterwards, there came the recognition of the need for further limitation of this formula; next the inquiry into those general laws of force from which this universal transformation necessarily results; next the deduction of these from the ultimate law of the persistence of force; next the perception that there is everywhere a process of Dissolution complementary to that of Evolution; and, finally, the determination of the conditions (specified in the foregoing essay) under which Evolution and Dissolution respectively occur. The filiation of these results, is, I think, tolerably manifest. The process has been one of continuous development, set up by the addition of Von Baer's law to a number of ideas that were in harmony with it. And I am not conscious of any other influences by which the process has been affected.

It is possible, however, that there may have been influences of which I am not conscious; and my opposition to M. Comte's system may have been one of them. The presentation of antagonistic thoughts, often produces greater definiteness and development of one's own thoughts. It is probable that the doctrines set forth in the essay on "The Genesis of Science," might never have been reached, had not my very decided dissent from M. Comte's conception, led me to work them out; and but for this, I might not have arrived at the classification of the sciences exhibited in the foregoing essay. Very possibly there are other cases in which the stimulus of repugnance to M. Comte's views, may have aided in elaborating my own views; though I cannot call to mind any other cases.

Let it by no means be supposed from all I have said, that I do not regard M. Comte's speculations as of great value.

True or untrue, his system as a whole, has doubtless produced important and salutary revolutions of thought in many minds; and will doubtless do so in many more. Doubtless, too, not a few of those who dissent from his general views, have been healthfully stimulated by consideration of them. The presentation of scientific knowledge and method as a whole, whether rightly or wrongly co-ordinated, cannot have failed greatly to widen the conceptions of most of his readers. And he has done especial service by familiarizing men with the idea of a social science, based on the other sciences. Beyond which benefits resulting from the general character and scope of his philosophy, I believe that there are scattered through his pages, many large ideas that are valuable not only as stimuli, but for their actual truth.

It has been by no means an agreeable task to make these personal explanations; but it has seemed to me a task not to be avoided. Differing so profoundly as I do from M. Comte on all fundamental doctrines, save those which we inherit in common from the past; it has become needful to dissipate the impression that I agree with him—needful to show that a large part of what is currently known as “positive philosophy,” is not “positive philosophy” in the sense of being peculiarly M. Comte’s philosophy; and to show that beyond that portion of the so-called “positive philosophy” which is not peculiar to him, I dissent from it.

And now at the close, as at the outset, let me express my great regret that these explanations should have been called forth by the statements of a critic who has treated me so liberally. Nothing will, I fear, prevent the foregoing pages from appearing like a very ungracious response to M. Laugel’s sympathetically-written review. I can only hope that the gravity of the question at issue, in so far as it concerns myself, may be taken in mitigation, if not as a sufficient apology.

March 12th, 1864.

III.

*OF LAWS IN GENERAL, AND THE ORDER
OF THEIR DISCOVERY.*

OF LAWS IN GENERAL, AND THE ORDER OF THEIR DISCOVERY.

[The following chapter was contained in the first edition of First Principles. I omitted it from the re-organized second edition, because it did not form an essential part of the new structure. As it is referred to in the foregoing pages, and as its general argument is germane to the contents of those pages, I have thought well to append it here. Moreover, though I hope eventually to incorporate it in that division of the Principles of Sociology which treats of Intellectual Progress, yet as it must be long before it can thus re-appear in its permanent place, and as, should I not get so far in the execution of my undertaking, it may never thus re-appear at all, it seems proper to make it more accessible than it is at present. The first and last sections, which served to link it into the argument of the work to which it originally belonged, are omitted. The rest has been carefully revised, and in some parts considerably altered.]

The recognition of Law being the recognition of uniformity of relations among phenomena, it follows that the order in which different groups of phenomena are reduced to law, must depend on the frequency with which the uniform relations they severally display are distinctly experienced. At any given stage of progress, those uniformities will be best known with which men's minds have been oftenest and most strongly impressed. In proportion partly to the number of times a relation has been presented to consciousness (not merely to the senses), and in proportion

partly to the vividness with which the terms of the relation have been cognized, will be the degree in which the constancy of connexion is perceived.

The succession in which relations are generalized being thus determined, there result certain derivative principles to which this succession must more immediately and obviously conform.

First is *the directness with which personal welfare is affected*. While, among surrounding things, many do not appreciably influence us in any way, some produce pleasures and some pains, in various degrees; and manifestly, those things whose actions on the organism for good or evil are most decided, will, *cæteris paribus*, be those whose laws of action are earliest observed.

Second comes *the conspicuousness of one or both phenomena between which a relation is to be perceived*. On every side are phenomena so concealed as to be detected only by close observation; others not obtrusive enough to attract notice; others which moderately solicit the attention; others so imposing or vivid as to force themselves on consciousness; and, supposing conditions to be the same, these last will of course be among the first to have their relations generalized.

In the third place, we have *the absolute frequency with which the relations occur*. There are coexistences and sequences of all degrees of commonness, from those which are ever present to those which are extremely rare; and manifestly, the rare coexistences and sequences, as well as the sequences which are very long in taking place, will not be reduced to law so soon as those which are familiar and rapid.

Fourthly has to be added *the relative frequency of occurrence*. Many events and appearances are limited to certain times or certain places, or both; and, as a relation which does not exist within the environment of an observer cannot be perceived by him, however common it may be elsewhere or in another age, we have to take account of the surrounding physical circum-

stances, as well as of the state of society, of the arts, and of the sciences—all of which affect the frequency with which certain groups of facts are observable. The

fifth corollary to be noticed is, that the succession in which different classes of relations are reduced to law, depends in part on their *simplicity*. Phenomena presenting great composition of causes or conditions, have their essential relations so masked, that it requires accumulated experiences to impress upon consciousness the true connexions of antecedents and consequents they involve. Hence, other things equal, the progress of generalization will be from the simple to the complex; and this it is which M. Comte has wrongly asserted to be the sole regulative principle of the progress.

Sixth comes *the degree of abstractness*. Concrete relations are the earliest acquisitions. Such analyses of them as separate the essential connexions from their disguising accompaniments, necessarily come later. The analyses of the connexions, always more or less compound, into their elements then becomes possible. And so on continually, until the highest and most abstract truths have been reached.

These, then, are the several derivative principles. The frequency and vividness with which uniform relations are repeated in conscious experience, determining the recognition of their uniformity, and this frequency and vividness depending on the above conditions, it follows that the order in which different classes of facts are generalized, must depend on the extent to which the above conditions are fulfilled in each class. Let us mark how the facts harmonize with this conclusion: taking first a few that elucidate the general truth, and afterwards some that exemplify the special truths which we here see follow from it.

The relations earliest known as uniformities, are those subsisting between the common properties of matter—tangi-

bility, visibility, cohesion, weight, etc. We have no trace of a time when the resistance offered by an object was regarded as caused by the will of the object; or when the pressure of a body on the hand holding it, was ascribed to the agency of a living being. And accordingly, these are the relations of which we are oftenest conscious; being objectively frequent, conspicuous, simple, concrete, and of immediate personal concern.

Similarly with the ordinary phenomena of motion. The fall of a mass on the withdrawal of its support, is a sequence which directly affects bodily welfare, is conspicuous, simple, concrete, and very often repeated. Hence it is one of the uniformities recognized before the dawn of tradition. We know of no era when movements due to terrestrial gravitation were attributed to volition. Only when the relation is obscured—only, as in the case of an *aérolite*, where the antecedent of the descent is unperceived, do we find the conception of personal agency.

On the other hand, motions of intrinsically the same order as that of a falling stone—those of the heavenly bodies—long remain ungeneralized; and until their uniformity is seen, are construed as results of will. This difference is clearly not dependent on comparative complexity or abstractness; since the motion of a planet in an ellipse, is as simple and concrete a phenomenon as the motion of a projected arrow in a parabola. But the antecedents are not conspicuous; the sequences are of long duration; and they are not often repeated. And that these are the causes of their slow reduction to law, we see in the fact that they are severally generalized in the order of their frequency and conspicuousness—the moon's monthly cycle, the sun's annual change, the periods of the inferior planets, the periods of the superior planets.

While astronomical sequences were still ascribed to volition, certain terrestrial sequences of a different kind, but some of them equally without complication, were interpreted in like manner. The solidification of water at a low tempe-

perature, is a phenomenon that is simple, concrete, and of much personal concern. But it is neither so frequent as those which we see are earliest generalized, nor is the presence of the antecedent so manifest. Though in all but tropical climates, mid-winter displays the relation between cold and freezing with tolerable constancy; yet, during the spring and autumn, the occasional appearance of ice in the mornings has no very obvious connexion with coldness of the weather. Sensation being so inaccurate a measure, it is not possible for the savage to experience the definite relation between a temperature of 32° and the congealing of water; and hence the long continued belief in personal agency. Similarly, but still more clearly, with the winds. The absence of regularity and the inconspicuousness of the antecedents, allowed the mythological explanation to survive for a great period.

During the era in which the uniformity of many quite simple inorganic relations was still unrecognized, certain organic relations, intrinsically very complex and special, were generalized. The constant coexistence of feathers and a beak, of four legs with an internal bony framework, are facts which were, and are, familiar to every savage. Did a savage find a bird with teeth, or a mammal clothed with feathers, he would be as much surprised as an instructed naturalist. Now these uniformities of organic structure thus early perceived, are of exactly the same kind as those more numerous ones later established by biology. The constant coexistence of mammary glands with two occipital condyles to the skull, of vertebræ with teeth lodged in sockets, of frontal horns with the habit of rumination, are generalizations as purely empirical as those known to the aboriginal hunter. The botanist cannot in the least understand the complex relation between papilionaceous flowers and seeds borne in flattened pods: he knows these and like connexions simply in the same way that the barbarian knows the con-

nexions between particular leaves and particular kinds of wood. But the fact that sundry of the uniform relations which chiefly make up the organic sciences, were very early recognized, is due to the high degree of vividness and frequency with which they were presented to consciousness. Though the connexion between the sounds characteristic of a bird, and the possession of edible flesh, is extremely involved; yet the two terms of the relation are conspicuous, often recur in experience, and a knowledge of their connexion has a direct bearing on personal welfare. Meanwhile innumerable relations of the same order, which are displayed with even greater frequency by surrounding plants and animals, remain for thousands of years unrecognised, if they are unobtrusive or of no apparent moment.

When, passing from this primitive stage to a more advanced stage, we trace the discovery of those less familiar uniformities which mainly constitute what is distinguished as Science, we find the succession in which knowledge of them is reached, to be still determined in the same manner. This will become obvious on contemplating separately the influence of each derivative condition.

How relations that have immediate bearings on the maintenance of life, are, other things equal, fixed in the mind before those which have no immediate bearings, the history of Science abundantly illustrates. The habits of existing uncivilized races, who fix times by moons and barter so many of one article for so many of another, show us that conceptions of equality and number, which are the germs of mathematical science, were developed under the immediate pressure of personal wants; and it can scarcely be doubted that those laws of numerical relations which are embodied in the rules of arithmetic, were first brought to light through the practice of mercantile exchange. Similarly with geometry. The derivation of the word shows us that it ori-

ginally included only certain methods of partitioning ground and laying out buildings. The properties of the scales and the lever, involving the first principle in mechanics, were early generalized under the stimulus of commercial and architectural needs. To fix the times of religious festivals and agricultural operations, were the motives which led to the establishment of the simpler astronomic periods. Such small knowledge of chemical relations as was involved in ancient metallurgy, was manifestly obtained in seeking how to improve tools and weapons. In the alchemy of later times, we see how greatly an intense hope of private benefit contributed to the disclosure of a certain class of uniformities. Nor is our own age barren of illustrations. "Here," says Humboldt, when in Guiana, "as in many parts in Europe, the sciences are thought worthy to occupy the mind, only so far as they confer some immediate and practical benefit on society." "How is it possible to believe," said a missionary to him, "that you have left your country to come to be devoured by mosquitoes on this river, and to measure lands that are not your own." Our coasts furnish like instances. Every sea-side naturalist knows how great is the contempt with which fishermen regard the collection of objects for the microscope or aquarium. Their incredulity as to the possible value of such things is so great, that they can scarcely be induced even by bribes to preserve the refuse of their nets. Nay, we need not go for evidence beyond daily table-talk. The demand for "practical science"—for a knowledge that can be brought to bear on the business of life—joined to the ridicule commonly vented on scientific pursuits having no obvious uses, suffice to show that the order in which laws are discovered greatly depends on the directness with which they affect our welfare.

That, when all other conditions are the same, obtrusive relations will be generalized before unobtrusive ones, is so nearly a truism that examples appear almost superfluous. If

it be admitted that by the aboriginal man, as by the child, the co-existent properties of large surrounding objects are noticed before those of minute objects, and that the external relations which bodies present are generalized before their internal relations, it must be admitted that in subsequent stages of progress, the comparative conspicuousness of relations has greatly affected the order in which they were recognized as uniform. Hence it happened that after the establishment of those very manifest sequences constituting a lunation, and those less manifest ones marking a year, and those still less manifest ones marking the planetary periods, astronomy occupied itself with such inconspicuous sequences as those displayed in the repeating cycle of lunar eclipses, and those which suggested the theory of epicycles and eccentrics; while modern astronomy deals with still more inconspicuous sequences, some of which, as the planetary rotations, are nevertheless the simplest which the heavens present. In physics, the early use of canoes implied an empirical knowledge of certain hydrostatic relations that are intrinsically more complex than sundry static relations not empirically known; but these hydrostatic relations were thrust upon observation. Or, if we compare the solution of the problem of specific gravity by Archimedes with the discovery of atmospheric pressure by Torricelli (the two involving mechanical relations of exactly the same kind), we perceive that the much earlier occurrence of the first than the last was determined, neither by a difference in the bearings on personal welfare, nor by a difference in the frequency with which illustrations of them came under observation, nor by relative simplicity; but by the greater obtrusiveness of the connexion between antecedent and consequent in the one case than in the other. Among miscellaneous illustrations, it may be pointed out that the connexions between lightning and thunder, and between rain and clouds, were recognized long before others of the same order, simply because they

thrust themselves on the attention. Or the long-delayed discovery of the microscopic forms of life, with all the phenomena they present, may be named as very clearly showing how certain groups of relations not ordinarily perceptible, though in other respects like long-familiar relations, have to wait until changed conditions render them perceptible. But, without further details, it needs only to consider the inquiries which now occupy the electrician, the chemist, the physiologist, to see that science has advanced, and is advancing, from the more conspicuous phenomena to the less conspicuous ones.

How the degree of absolute frequency of a relation affects the recognition of its uniformity, we see in contrasting certain biological facts. The connexion between death and bodily injury, constantly displayed not only in men but in all inferior creatures, was known as an instance of natural causation while yet deaths from diseases were thought supernatural. Among diseases themselves, it is observable that unusual ones were regarded as of demoniacal origin during ages when the more frequent were ascribed to ordinary causes: a truth paralleled among our own peasantry, who by the use of charms show a lingering superstition with respect to rare disorders, which they do not show with respect to common ones, such as colds. Passing to physical illustrations, we may note that within the historic period whirlpools were accounted for by the agency of water-spirits; but we do not find that within the same period the disappearance of water on exposure either to the sun or to artificial heat was interpreted in an analogous way: though a more marvellous occurrence, and a much more complex one, its great frequency led to the early recognition of it as a natural uniformity. Rainbows and comets do not differ much in conspicuousness, and a rainbow is intrinsically the more involved phenomenon; but chiefly because of their far greater commonness, rainbows were perceived to have a direct dependence

on sun and rain while yet comets were regarded as signs of divine wrath.

That races living inland must long have remained ignorant of the daily and monthly sequences of the tides, and that tropical races could not early have comprehended the phenomena of northern winters, are extreme illustrations of the influence which relative frequency has on the recognition of uniformities. Animals which, where they are indigenous, call forth no surprise by their structures or habits, because these are so familiar, when taken to countries where they have never been seen, are looked at with an astonishment approaching to awe—are even thought supernatural: a fact which will suggest numerous others that show how the localization of phenomena in part controls the order in which they are reduced to law. Not only however does their localization in space affect the progression, but also their localization in time. Facts which are rarely if ever manifested in one era, are rendered very frequent in another, simply through the changes wrought by civilization. The lever, of which the properties are illustrated in the use of sticks and weapons, is vaguely understood by every savage—on applying it in a certain way he rightly anticipates certain effects; but the wheel-and-axle, pulley, and screw, cannot have their powers either empirically or rationally known till the advance of the arts has more or less familiarized them. Through those various means of exploration which we have inherited and added to, we have become acquainted with a vast range of chemical relations that were relatively non-existent to the primitive man. To highly-developed industries we owe both the substances and the appliances that have disclosed to us countless uniformities which our ancestors had no opportunity of seeing. These and like instances that will occur to the reader, show that the accumulated materials, and processes, and products, which characterize the environments of complex societies, greatly increase the accessibility of various

classes of relations; and by so multiplying the experiences of them, or making them relatively frequent, facilitate their generalization. Moreover, various classes of phenomena presented by society itself, as for instance those which political economy formulates, become relatively frequent, and therefore recognizable, in advanced social states; while in less advanced ones they are either too rarely displayed to have their relations perceived, or, as in the least advanced ones, are not displayed at all.

That, where no other circumstances interfere, the order in which different uniformities are established varies as their complexity, is manifest. The geometry of straight lines was understood before the geometry of curved lines; the properties of the circle before the properties of the ellipse, parabola, and hyperbola; and the equations of curves of single curvature were ascertained before those of curves of double curvature. Plane trigonometry comes in order of time and simplicity before spherical trigonometry; and the mensuration of plane surfaces and solids before the mensuration of curved surfaces and solids. Similarly with mechanics: the laws of simple motion were generalized before those of compound motion; and those of rectilinear motion before those of curvilinear motion. The properties of equal-armed levers or scales, were understood before those of levers with unequal arms; and the law of the inclined plane was formulated earlier than that of the screw, which involves it. In chemistry, the progress has been from the simple inorganic compounds to the more involved or organic compounds. And where, as in the higher sciences, the conditions of the exploration are more complicated, we still may clearly trace relative complexity as determining the order of discovery where other things are equal.

The progression from concrete relations to abstract ones, and from the less abstract to the more abstract, is equally obvious. Numeration, which in its primary form concerned

itself only with groups of actual objects, came earlier than simple arithmetic; the rules of which deal with numbers apart from objects. Arithmetic, limited in its sphere to concrete numerical relations, is alike earlier and less abstract than Algebra, which deals with the relations of these relations. And in like manner, the Calculus of Operations comes after Algebra, both in order of evolution and in order of abstractness. In Mechanics, the more concrete relations of forces exhibited in the lever, inclined plane, etc., were understood before the more abstract relations expressed in the laws of resolution and composition of forces; and later than the three abstract laws of motion as formulated by Newton came the still more abstract law of inertia. Similarly with Physics and Chemistry, there has been an advance from truths entangled in all the specialities of particular facts and particular classes of facts, to truths disentangled from the disguising incidents under which they are manifested—to truths of a higher abstractness.

Brief and rude as is this sketch of a mental development that has been long and complicated, I venture to think it shows inductively what was deductively inferred, that the order in which separate groups of uniformities are recognized, depends not on one circumstance but on several circumstances. The various classes of relations are generalized in a certain succession, not solely because of one particular kind of difference in their natures; but also because they are variously placed in time and in space, variously open to observation, and variously related to our own constitutions: our perception of them being influenced by all these conditions in endless combinations. The comparative degrees of importance, of obtrusiveness, of absolute frequency, of relative frequency, of simplicity, of concreteness, are every one of them factors; and from their unions in proportions that are never twice alike, there results a highly complex process of mental evolution. But while it is thus manifest

that the proximate causes of the succession in which relations are reduced to law, are numerous and involved; it is also manifest that there is one ultimate cause to which these proximate causes are subordinate. As the several circumstances that determine the early or late recognition of uniformities are circumstances that determine the number and strength of the impressions which these uniformities make on the mind, it follows that the progression conforms to a certain fundamental principle of psychology. We see *à posteriori*, what we concluded *à priori*, that the order in which relations are generalized, depends on the frequency and impressiveness with which they are repeated in conscious experience.

Having roughly analyzed the progress of the past, let us take advantage of the light thus thrown on the present, and consider what is implied respecting the future.

Note first that the likelihood of the universality of Law has been ever growing greater. Out of the countless co-existences and sequences with which mankind are environed, they have been continually transferring some from the group whose order was supposed to be arbitrary, to the group whose order is known to be uniform. And manifestly, as fast as the relations that are unreduced to law become fewer, the probability that among them there are some that do not conform to law, becomes less. To put the argument numerically—It is clear that when out of surrounding phenomena a hundred of several kinds have been found to occur in constant connexions, there arises a slight presumption that all phenomena occur in constant connexions. When uniformity has been established in a thousand cases, more varied in their kinds, the presumption gains strength. And when the known cases of uniformity amount to myriads, including many of each variety, it becomes an ordinary induction that uniformity exists everywhere.

Silently and insensibly their experiences have been pressing men on towards the conclusion thus drawn. Not out of a conscious regard for these reasons, but from a habit of thought which these reasons formulate and justify, all minds have been advancing towards a belief in the constancy of surrounding coexistences and sequences. Familiarity with concrete uniformities has generated the abstract conception of uniformity—the idea of *Law*; and this idea has been in successive generations slowly gaining fixity and clearness. Especially has it been thus among those whose knowledge of natural phenomena is the most extensive—men of science. The mathematician, the physicist, the astronomer, the chemist, severally acquainted with the vast accumulations of uniformities established by their predecessors, and themselves daily adding new ones as well as verifying the old, acquire a far stronger faith in law than is ordinarily possessed. With them this faith, ceasing to be merely passive, becomes an active stimulus to inquiry. Wherever there exist phenomena of which the dependence is not yet ascertained, these most cultivated intellects, impelled by the conviction that here too there is some invariable connexion, proceed to observe, compare, and experiment; and when they discover the law to which the phenomena conform, as they eventually do, their general belief in the universality of law is further strengthened. So overwhelming is the evidence, and such the effect of this discipline, that to the advanced student of nature, the proposition that there are lawless phenomena has become not only incredible but almost inconceivable.

This habitual recognition of law which already distinguishes modern thought from ancient thought, must spread among men at large. The fulfilment of predictions made possible by every new step, and the further command gained of nature's forces, prove to the uninitiated the validity of scientific generalizations and the doctrine they illustrate. Widening education is daily diffusing among the mass of

men that knowledge of these generalizations which has been hitherto confined to the few. And as fast as this diffusion goes on, must the belief of the scientific become the belief of the world at large.

That law is universal, will become an irresistible conclusion when it is perceived that *the progress in the discovery of laws itself conforms to law*; and when this perception makes it clear why certain groups of phenomena have been reduced to law, while other groups are still unreduced. When it is seen that the order in which uniformities are recognized, must depend upon the frequency and vividness with which they are repeated in conscious experience; when it is seen that, as a matter of fact, the most common, important, conspicuous, concrete, and simple, uniformities were the earliest recognized, because they were experienced oftenest and most distinctly; it will by implication be seen that long after the great mass of phenomena have been generalized, there must remain phenomena which, from their rareness, or unobtrusiveness, or seeming unimportance, or complexity, or abstractness, are still ungeneralized. Thus will be furnished a solution to a difficulty sometimes raised. When it is asked why the universality of law is not already fully established, there will be the answer that the directions in which it is not yet established are those in which its establishment must necessarily be latest. That state of things which is inferable beforehand, is just the state which we find to exist. If such coexistences and sequences as those of Biology and Sociology are not yet reduced to law, the presumption is not that they are irreducible to law, but that their laws elude our present means of analysis. Having long ago proved uniformity throughout all the lower classes of relations, and having been step by step proving uniformity throughout classes of relations successively higher and higher, if we have not yet succeeded with the highest classes, it may

be fairly concluded that our powers are at fault, rather than that the uniformity does not exist. And unless we make the absurd assumption that the process of generalization, now going on with unexampled rapidity, has reached its limit, and will suddenly cease, we must infer that ultimately mankind will discover a constant order of manifestation even in the most involved and obscure phenomena.

IV.

THE ORIGIN OF ANIMAL-WORSHIP.

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THE ORIGIN OF ANIMAL-WORSHIP.

MR. McLENNAN's recent essays on the Worship of Animals and Plants have done much to elucidate a very obscure subject. By pursuing in this case, as before in another case, the truly scientific method of comparing the phenomena presented by existing uncivilized races with those which the early traditions of civilized races present, he has rendered both more comprehensible than they were before.

It seems to me, however, that Mr. McLennan gives but an indefinite answer to the essential question—How did the worship of animals and plants arise? Indeed, in his concluding paper, he expressly leaves this problem without a solution; saying that his “is not an hypothesis explanatory of the origin of *Totemism*, be it remembered, but an hypothesis explanatory of the animal and plant worship of the ancient nations.” So that we have still to ask—Why have savage tribes so generally taken animals and plants and other things as their totems? What can have induced this tribe to ascribe special sacredness to one creature, and that tribe to another? And if to these questions the general reply is, that each tribe considers itself to be descended from the object of its reverence, then there presses for answer the further question—How came so strange a notion into existence? If this notion occurred

in one case only, we might set it down to some whim of thought or some illusive occurrence. But appearing as it does with multitudinous variations among so many uncivilized races in different parts of the world, and having left equally numerous traces in the superstitions of the extinct civilized races, we cannot assume any special or exceptional cause. Moreover, the general cause, whatever it may be, must be such as does not negative an aboriginal intelligence essentially like our own. After studying the grotesque beliefs of savages, we are apt to suppose that their reason is not as our reason. But this supposition is inadmissible. Given the amount of knowledge which primitive men possess, and given the imperfect verbal symbols used by them in speech and thought, and the conclusions they habitually reach will be those that are *relatively* the most rational. This must be our postulate; and, setting out with this postulate, we have to ask how primitive men came so generally, if not universally, to believe themselves the progeny of animals or plants or inanimate bodies. There is, I believe, a satisfactory answer.

The proposition with which Mr. McLennan sets out, that totem-worship preceded the worship of anthropomorphic gods, is one to which I can yield but a qualified assent. It is true in a sense, but not wholly true. If the words "gods" and "worship" carry with them their ordinary definite meanings, the statement is true; but if their meanings are widened so as to comprehend those earliest vague notions out of which the definite ideas of gods and worship are evolved, I think it is not true. The rudimentary form of all religion is the propitiation of dead ancestors, who are supposed to be still existing, and to be capable of working good or evil to their descendants. As a preparation for dealing hereafter with the principles of

sociology, I have, for some years past, directed much attention to the modes of thought current in the simpler human societies; and evidence of many kinds, furnished by all varieties of uncivilized men, has forced on me a conclusion harmonizing with that lately expressed in this Review by Prof. Huxley—namely, that the savage, conceiving a corpse to be deserted by the active personality who dwelt in it, conceives this active personality to be still existing, and that his feelings and ideas concerning it form the basis of his superstitions. Everywhere we find expressed or implied the belief that each person is double; and that when he dies, his other self, whether remaining near at hand or gone far away, may return, and continues capable of injuring his enemies and aiding his friends.¹

¹ A critical reader may raise an objection. If animal-worship is to be rationally interpreted, how can the interpretation set out by assuming a belief in the spirits of dead ancestors—a belief which just as much requires explanation? Doubtless there is here a wide gap in the argument. I hope eventually to fill it up. Here, out of many experiences which conspire to generate this belief, I can but briefly indicate the leading ones: 1. It is not impossible that his shadow, following him everywhere, and moving as he moves, may have some small share in giving to the savage a vague idea of his duality. It needs but to watch a child's interest in the movements of its shadow, and to remember that at first a shadow cannot be interpreted as a negation of light, but is looked upon as an entity, to perceive that the savage may very possibly consider it as a specific something which forms part of him. 2. A much more decided suggestion of the same kind is likely to result from the reflection of his face and figure in water: imitating him as it does in his form, colors, motions, grimaces. When we remember that not unfrequently a savage objects to have his portrait taken, because he thinks whoever carries away a representation of him carries away some part of his being, will see how probable it is that he thinks his double in the water is a reality in some way belonging to him. 3. Echoes must greatly tend to confirm the idea of duality otherwise arrived at. Incapable as he is of understanding their natural origin, the primitive man necessarily ascribes them to living beings—beings who mock him and elude his search. 4. The suggestions resulting from these and other physical phenomena are, however, secondary in importance. The root of this belief in another self lies in the experience of dreams. The distinction so easily made by us between our life in dreams and our real life, is one which the savage recognizes in but a vague way; and he cannot express even that distinction which he perceives. When he awakes, and to those who have seen

But how out of the desire to propitiate this second personality of a deceased man (the words "ghost" or "spirit" are somewhat misleading, since the savage believes that the second personality reappears in a form equally tangible with the first) does there grow up the worship of

him lying quietly asleep, describes where he has been, and what he has done, his rude language fails to state the difference between seeing and dreaming that he saw, doing and dreaming that he did. From this inadequacy of his language it not only results that he cannot truly represent this difference to others, but also that he cannot truly represent it to himself. Hence, in the absence of an alternative interpretation, his belief, and that of those to whom he tells his adventures, is that his other self has been away and came back when he awoke. And this belief, which we find among various existing savage tribes, we equally find in the traditions of the early civilized races.

5. The conception of another self capable of going away and returning, receives what to the savage must seem conclusive verifications from the abnormal suspensions of consciousness, and derangements of consciousness, that occasionally occur in members of his tribe. One who has fainted, and cannot be immediately brought back to himself (note the significance of our own phrases "returning to himself," etc.) as a sleeper can, shows him a state in which the other self has been away for a time beyond recall. Still more is this prolonged absence of the other self shown him in cases of apoplexy, catalepsy, and other forms of suspended animation. Here for hours the other self persists in remaining away, and on returning refuses to say where he has been. Further verification is afforded by every epileptic subject, into whose body, during the absence of the other self, some enemy has entered; for how else does it happen that the other self on returning denies all knowledge of what his body has been doing? And this supposition that the body has been "possessed" by some other being, is confirmed by the phenomena of somnambulism and insanity.

6. What, then, is the interpretation inevitably put upon death? The other self has habitually returned after sleep, which simulates death. It has returned, too, after fainting, which simulates death much more. It has even returned after the rigid state of catalepsy, which simulates death very greatly. Will it not return also after this still more prolonged quiescence and rigidity? Clearly it is quite possible—quite probable even. The dead man's other self is gone away for a long time, but it still exists somewhere, far or near, and may at any moment come back to do all he said he would do. Hence the various burial-rites—the placing of weapons and valuables along with the body, the daily bringing of food to it, etc. I hope hereafter to show that, with such knowledge of the facts as he has, this interpretation is the most reasonable the savage can arrive at. Let me here, however, by way of showing how clearly the facts bear out this view, give one illustration out of many. "The ceremonies with which they [the Veddahs] invoke them [the shades of the dead] are few as they are simple. The most common

animals, plants, and inanimate objects? Very simply. Savages habitually distinguish individuals by names that are either directly suggestive of some personal trait or fact of personal history, or else express an observed community of character with some well-known object. Such a genesis of individual names, before surnames have arisen, is inevitable; and how easily it arises we shall see on remembering that it still goes on in its original form, even when no longer needful. I do not refer only to the significant fact that in some parts of England, as in the nail-making districts, nicknames are universal, and surnames scarcely recognized; but I refer to the general usage among both children and adults. The rude man is apt to be known as "a bear;" a sly fellow, as an "old fox;" a hypocrite, as "the crocodile." Names of plants, too, are used; as when the red-haired boy is called "carrots" by his school-fellows. Nor do we lack nicknames derived from inorganic objects and agents: instance that given by Mr. Carlyle to the elder Sterling—"Captain Whirlwind." Now, in the earliest savage state, this metaphorical nam-

is the following: An arrow is fixed upright in the ground, and the Veddah dances slowly round it, chanting this invocation, which is almost musical in its rhythm:

"Mâ miya, mâ miy, mâ deyâ,
Topang Koyichetti mittigan yandâh!"

"My departed one, my departed one, my God!
Where art thou wandering?"

"This invocation appears to be used on all occasions when the intervention of the guardian spirits is required in sickness, preparatory to hunting, etc. Sometimes in the latter case, a portion of the flesh of the game is promised as a votive offering, in the event of the chase being successful; and they believe that the spirits will appear to them in dreams and tell them where to hunt. Sometimes they cook food and place it in the dry bed of a river, or some other secluded spot, and then call on their deceased ancestors by name, 'Come and partake of this! Give us maintenance as you did when living! Come, whosoever you may be, on a tree, on a rock, in the forest, come!' And dance round the food, half chanting half shouting the invocation."—*Bailey, Trans. Eth. Soc.*, London, N. S., ii., p. 301.

ing will in most cases commence afresh in each generation—must do so, indeed, until surnames of some kind have been established. I say in most cases, because there will occur exceptions in the cases of men who have distinguished themselves. If “the Wolf,” proving famous in fight, becomes a terror to neighboring tribes, and a dominant man in his own, his sons, prond of their parentage, will not let fall the fact that they descended from the Wolf; nor will this fact be forgotten by the rest of the tribe who held “the Wolf” in awe, and see some reason to dread his sons. In proportion to the power and celebrity of the Wolf will this pride and this fear conspire to maintain among his grandchildren and great-grandchildren, as well as among those over whom they dominate, the remembrance of the fact that their ancestor was the Wolf. And if, as will occasionally happen, this dominant family becomes the root of a new tribe, the members of this tribe will become known to themselves and others as the Wolves.

We need not rest satisfied with the inference that this inheritance of nicknames *will* take place: there is proof that it *does* take place. As nicknaming after animals, plants, and other objects, still goes on among ourselves, so among ourselves does there go on the descent of nicknames. An instance has come under my own notice on an estate in the West Highlands, belonging to some friends with whom I frequently have the pleasure of spending a few weeks in the autumn. “Take a young Croshek,” has more than once been the reply of my host to the inquiry, who should go with me when I was setting out salmon-fishing. The elder Croshek I knew well; and supposed that this name, borne by him and by all belonging to him, was the family surname. Some years passed before I learned that the real surname was Cameron; that the

father was called Croshek, after the name of his cottage, to distinguish him from other Camerons employed about the premises; and that his children had come to be similarly distinguished. Though here, as very generally in Scotland, the nickname was derived from the place of residence, yet had it been derived from an animal, the process would have been the same—inheritance of it would have occurred just as naturally. Not even for this small link in the argument, however, need we depend on inference: there is fact to bear us out. Mr. Bates, in his "Naturalist on the River Amazon" (2d ed., p. 376), describing three half-castes who accompanied him on a hunting trip, says: "Two of them were brothers—namely, João (John) and Zephyrino Jabutí; Jabutí, or tortoise, being a nickname which their father had earned for his slow gait, and which, as is usual in this country, had descended as the surname of the family." Let me add the statement made by Mr. Wallace respecting this same region, that "one of the tribes on the river Isánna is called 'Jurupari' (Devils). Another is called 'Ducks;' a third, 'Stars;' a fourth, 'Mandiocca.'" Putting these two statements together, can there be any doubt about the genesis of these tribal names? Let the tortoise become sufficiently distinguished (not necessarily by superiority—great inferiority may occasionally suffice) and the tradition of descent from him, preserved by his descendants themselves if he was superior, and by their contemptuous neighbors if he was inferior, may become a tribal name.¹

¹ Since the foregoing pages were written, my attention has been drawn by Sir John Lubbock to a passage in the appendix to the second edition of "Pre-historic Times," in which he has indicated this derivation of tribal names. He says: "In endeavoring to account for the worship of animals, we must remember that names are very frequently taken from them. The children and followers of a man called the Bear or the Lion would make that a tribal name. Hence the animal itself would be first respected, at last worshipped." Of the genesis of this worship, however, Sir John Lubbock does not give any specific

"But this," it will be said, "does not amount to an explanation of animal-worship." True: a third factor remains to be specified. Given a belief in the still-existing other self of the deceased ancestor, who must be propitiated; given this survival of his metaphorical name among his grandchildren, great-grandchildren, etc.; and the further requisite is that the distinction between metaphor and reality shall be forgotten. Let the tradition of the ancestor fail to keep clearly in view the fact that he was a man called the Wolf—let him be habitually spoken of as the Wolf, just as when alive; and the natural mistake of taking the name literally will bring with it, firstly, a belief in descent from the actual wolf, and, secondly, a treatment of the wolf in a manner likely to propitiate him—a manner appropriate to one who may be the other self of the dead ancestor, or one of the kindred, and therefore a friend.

That a misunderstanding of this kind will naturally grow up, becomes obvious when we bear in mind the great indefiniteness of primitive language. As Prof. Max Müller says, respecting certain misinterpretations of an opposite kind: "These metaphors . . . would become mere names handed down in the conversation of a family, understood perhaps by the grandfather, familiar to the father, but strange to the son, and misunderstood by the grandson." We have ample reason, then, for thinking that such misinterpretations are likely to occur. Nay, we may go further. We are justified in saying that they are certain to occur. For undeveloped languages contain no words capable of indicating the distinction to be kept in view. In the tongues of existing inferior races, only con-
explanation. Apparently he inclines to the belief, tacitly adopted also by Mr. McLennan, that animal-worship is derived from an original Fetichism, of which it is a more developed form. As will shortly be seen, I take a different view of its origin.

crete objects and acts are expressible. The Australians have a name for each kind of tree, but no name for tree irrespective of kind. And though some witnesses allege that their vocabulary is not absolutely destitute of generic names, its extreme poverty in such is unquestionable. Similarly with the Tasmanians. Dr. Milligan says they "had acquired very limited powers of abstraction or generalization. They possessed no words representing abstract ideas; for each variety of gum-tree and wattle-tree, etc., etc., they had a name, but they had no equivalent for the expression, 'a tree;' neither could they express abstract qualities, such as hard, soft, warm, cold, long, short, round, etc.; for 'hard,' they would say 'like a stone,' for 'tall,' they would say 'long legs,' etc., and for 'round,' they said 'like a ball,' 'like the moon,' and so on, usually suiting the action to the word, and confirming, by some sign, the meaning to be understood."¹ Now, even making allowance for over-statement here (which seems needful, since the word "long," said to be inexpressible in the abstract, subsequently occurs as qualifying a concrete in the expression, "long legs"), it is sufficiently manifest that so imperfect a language must fail to convey the idea of a name, as something separate from a thing; and that still less can it be capable of indicating the act of naming. Familiar use of such partially abstract words as are applicable to all objects of a class, is needful before there can be reached the conception of a name—a word symbolizing the symbolic character of other words; and the conception of a name, with its answering abstract term, must be long current before the verb to name can arise. Hence, among tribes with speech so rude, it will be impossible to transmit the tradition of an ancestor named the Wolf, as distinguished from the actual wolf. The children and grand-

¹ Proc. Royal Soc. Tasmania, iii., p. 280.

children who saw him will not be led into error; but in later generations, descent from the Wolf will inevitably come to mean descent from the animal known by that name. And the ideas and sentiments which, as above shown, naturally grow up around the belief that the dead parents and grandparents are still alive, and ready, if propitiated, to befriend their descendants, will be extended to the wolf species.

Before passing to other developments of this general view, let me point out how not simply animal-worship is thus accounted for, but also the conception, so variously illustrated in ancient legends, that animals are capable of displaying human powers of speech and thought and action. Mythologies are full of stories of beasts and birds and fishes that have played intelligent parts in human affairs—creatures that have befriended particular persons by giving them information, by guiding them, by yielding them help; or else that have deceived them, verbally or otherwise. Evidently all these traditions, as well as those about abductions of women by animals and fostering of children by them, fall naturally into their places as results of the habitual misinterpretation I have described.

The probability of the hypothesis will appear still greater when we observe how readily it applies to the worship of other orders of objects. Belief in actual descent from an animal, strange as we may think it, is one by no means incongruous with the unanalyzed experiences of the savage; for there come under his notice many metamorphoses, vegetal and animal, which are apparently of like character. But how could he possibly arrive at so grotesque a conception as that the progenitor of his tribe was the sun, or the moon, or a particular star? No observation of surrounding phenomena affords the slightest

suggestion of any such possibility. But by the inheritance of nicknames that are eventually mistaken for the names of the objects from which they were derived, the belief readily arises—is sure to arise. That the names of heavenly bodies will furnish metaphorical names to the uncivilized, is manifest. Do we not ourselves call a distinguished singer or actor a star? And have we not in poems numerous comparisons of men and women to the sun and moon; as in “*Love’s Labour’s Lost*,” where the princess is called “a gracious moon,” and as in “*Henry VIII.*,” where we read—“Those suns of glory, those two lights of men?” Clearly, primitive men will be not unlikely thus to speak of the chief hero of a successful battle. When we remember how the arrival of a triumphant warrior must affect the feelings of his tribe, dissipating clouds of anxiety and irradiating all faces with joy, we shall see that the comparison of him to the sun is extremely natural; and in early speech this comparison can be made only by calling him the sun. As before, then, it will happen that, through a confounding of the metaphorical name with the actual name, his progeny, after a few generations, will be regarded by themselves and others as descendants of the sun. And, as a consequence, partly of actual inheritance of the ancestral character, and partly of maintenance of the traditions respecting the ancestor’s achievements, it will also naturally happen that the solar race will be considered a superior race, as we find it habitually is.

The origin of other totems, equally strange if not even stranger, is similarly accounted for, though otherwise unaccountable. One of the New-Zealand chiefs claimed as his progenitor the neighboring great mountain, Tongariro. This seemingly-whimsical belief becomes intelligible when we observe how easily it may have arisen from a nickname. Do we not ourselves sometimes speak figuratively

of a tall, fat man as a mountain of flesh? And, among a people prone to speak in still more concrete terms, would it not happen that a chief, remarkable for his great bulk, would be nicknamed after the highest mountain within sight, because he towered above other men as this did above surrounding hills? Such an occurrence is not simply possible, but probable. And, if so, the confusion of metaphor with fact would originate this surprising genealogy. A notion perhaps yet more grotesque, thus receives a satisfactory interpretation. What could have put it into the imagination of any one that he was descended from the dawn? Given the extremest credulity, joined with the wildest fancy, it would still seem requisite that the ancestor should be conceived as an entity; and the dawn is entirely without that definiteness and comparative constancy which enter into the conception of an entity. But when we remember that "the Dawn" is a natural complimentary name for a beautiful girl opening into womanhood, the genesis of the idea becomes, on the above hypothesis, quite obvious.

Another indirect verification is that we thus get a clear conception of Fetichism in general. Under the fetichistic mode of thought, surrounding objects and agents are regarded as having powers more or less definitely personal in their natures. And the current interpretation is, that human intelligence, in its early stages, is obliged to conceive of their powers under this form. I have myself hitherto accepted this interpretation; though always with a sense of dissatisfaction. This dissatisfaction was, I think, well grounded. The theory is scarcely a theory properly so called; but rather, a restatement in other words. Uncivilized men *do* habitually form anthropomorphic conceptions of surrounding things; and this ob-

served general fact is transformed into the theory that at first they *must* so conceive them—a theory for which the psychological justification attempted, seems to me inadequate. From our present stand-point, it becomes manifest that Fetichism is not primary but secondary. What has been said above almost of itself shows this. Let us, however, follow out the steps of its genesis. Respecting the Tasmanians, Dr. Milligan says: “The names of men and women were taken from natural objects and occurrences around, as, for instance, a kangaroo, a gum-tree, snow, hail, thunder, the wind, flowers in blossom, etc.” Surrounding objects, then, giving origin to names of persons, and being, in the way shown, eventually mistaken for the actual progenitors of those who descend from persons nicknamed after them, it results that these surrounding objects come to be regarded as in some manner possessed of personalities like the human. He whose family tradition is that his ancestor was “the Crab,” will conceive the crab as having a disguised inner power like his own; and alleged descent from “the palm-tree” will entail belief in some kind of consciousness dwelling in the palm-tree. Hence, in proportion as the animals, plants, and inanimate objects or agents that originate names of persons, become numerous (which they will do in proportion as a tribe becomes large and the number of persons to be distinguished from one another increases), multitudinous things around will acquire imaginary personalities. And so it will happen that, as Mr. McLennan says of the Feejeeans: “Vegetables and stones, nay, even tools and weapons, pots and canoes, have souls that are immortal, and that, like the souls of men, pass on at last to Mbulu, the abode of departed spirits.” Setting out, then, with a belief in the still-living other self of the dead ancestor, the alleged general cause of misapprehension affords us an

intelligible origin of the fetichistic conception; and we are enabled to see how it tends to become a general, if not a universal, conception.

Other apparently inexplicable phenomena are at the same time divested of their strangeness. I refer to the beliefs in, and worship of, compound monsters—impossible hybrid animals, and forms that are half human, half brutal. The theory of a primordial Fetichism, supposing it otherwise adequate, yields no feasible solution of these. Grant the alleged original tendency to think of all natural agencies as in some way personal. Grant, too, that hence may arise a worship of animals, plants, and even inanimate bodies. Still the obvious implication is that the worship so derived will be limited to things that are, or have been, perceived. Why should this mode of thought lead the savage to imagine a combination of bird and mammal; and not only to imagine it, but worship it as a god? If even we admit that some illusion may have suggested the belief in a creature half man, half fish, we cannot thus explain the prevalence among Eastern races of idols representing bird-headed men, men having their legs replaced by the legs of a cock, and men with the heads of elephants.

Carrying with us the inferences above drawn, however, it is a manifest corollary that ideas and practices of these kinds will arise. When tradition preserves both lines of ancestry—when a chief, nicknamed the Wolf, carries away from an adjacent tribe a wife who is remembered either under the animal name of her tribe, or as a woman; it will happen that if a son distinguishes himself, the remembrance of him among his descendants will be that he was born of a wolf and some other animal, or of a wolf and a woman. Misinterpretation, arising in the way described from defects of language, will entail belief

in a creature uniting the attributes of the two ; and if the tribe grows into a society, representations of such a creature will become objects of worship. One of the cases cited by Mr. McLennan may here be repeated in illustration. "The story of the origin of the Dikokamenni Kirgheez," they say, "from a red greyhound and a certain queen with her forty handmaidens, is of ancient date." Now, if "the red greyhound" was the nickname of a man extremely swift of foot (celebrated runners have been similarly nicknamed among ourselves), a story of this kind would naturally arise ; and if the metaphorical name was mistaken for the actual name, there might result, as the idol of the race, a compound form appropriate to the story. We need not be surprised, then, at finding among the Egyptians the goddess Pasht represented as a woman with a lion's head, and the god Month as a man with the head of a hawk. The Babylonian gods—one having the form of a man with an eagle's tail, and another uniting a human bust to a fish's body—no longer appear such unaccountable conceptions. We get feasible explanations, too, of sculptures representing sphinxes, winged human-headed bulls, etc. ; as well as of the stories about centaurs, satyrs, and the rest.

Ancient myths in general thus acquire meanings considerably different from those ascribed to them by comparative mythologists. Though these last may be in part correct, yet if the foregoing argument is valid, they can scarcely be correct in their main outlines. Indeed, if we read the facts the other way upward, regarding as secondary or additional the elements that are said to be primary, while we regard as primary certain elements which are considered as accretions of later times, we shall, I think, be nearer the truth.

The current theory of the myth is that it has grown out of the habit of symbolizing natural agents and processes, in terms of human personalities and actions. Now, it may in the first place be remarked that, though symbolization of this kind is common enough among civilized races, it is not common among races that are the most uncivilized. By existing savages, surrounding objects, motions, and changes, are habitually used to convey ideas respecting human transactions. It is by no means so much the habit to express by the doings of men the course of natural phenomena. It needs but to read the speech of an Indian chief to see that just as primitive men name one another metaphorically after surrounding objects, so do they metaphorically describe one another's doings as though they were the doings of natural objects. But assuming a contrary habit of thought to be the dominant one, ancient myths are explained as results of the primitive tendency to symbolize inanimate things and their changes, by human beings and their doings.

A kindred difficulty must be added. The change of verbal meaning from which the myth is said to arise, is a change opposite in kind to that which prevails in the earlier stages of linguistic development. It implies a derivation of the concrete from the abstract; whereas at first abstracts are derived only from concretes: the concreting of abstracts being a subsequent process. In the words of Prof. Max Müller, there are "dialects spoken at the present day which have no abstract nouns, and the more we go back in the history of languages, the smaller we find the number of these useful expressions" ("Chips," vol. ii., p. 54); or, as he says more recently: "Ancient words and ancient thoughts, for both go together, have not yet arrived at that stage of abstraction in which, for instance, active powers, whether natural or supernatural,

can be represented in any but a personal and more or less human form." (*Fraser's Magazine*, April, 1870.) Here the concrete is represented as original, and the abstract as derivative. Immediately afterward, however, Prof. Max Müller, having given as examples of abstract nouns, "day and night, spring and winter, dawn and twilight, storm and thunder," goes on to argue that, "as long as people thought in language, it was simply impossible to speak of morning or evening, of spring and winter, without giving to these conceptions something of an individual, active, sexual, and at last personal character." ("Chips," etc., vol. ii., p. 55.) Here the concrete is derived from the abstract—the personal conception is represented as coming *after* the impersonal conception; and through such transformation of the impersonal into the personal, Prof. Max Müller considers ancient myths to have arisen. How are these propositions reconcilable? One of two things must be said: If originally there were none of these abstract nouns, then the earliest statements respecting the daily course of Nature were made in concrete terms—the personal elements of the myth were the primitive elements, and the impersonal expressions which are their equivalents came later. If this is not admitted, then it must be held that, until after there arose these abstract nouns, there were no current statements at all respecting these most conspicuous objects and changes which the heavens and the earth present; and that the abstract nouns having been somehow formed, and rightly formed, and used without personal meanings, afterward became personalized—a process the reverse of that which characterizes early linguistic progress.

No such contradictions occur if we interpret myths after the manner that has been indicated. Nay, besides escaping contradictions, we meet with unexpected solu-

tions. The moment we try it, the key unlocks for us with ease what seems a quite inexplicable fact, which the current hypothesis takes as one of its postulates. Speaking of such words as sky and earth, dew and rain, rivers and mountains, as well as of the abstract nouns above named, Prof. Max Müller says: "Now, in ancient languages every one of these words had necessarily a termination expressive of gender, and this naturally produced in the mind the corresponding idea of sex, so that these names received not only an individual but a sexual character. There was no substantive which was not either masculine or feminine; neuters being of later growth, and distinguishable chiefly in the nominative." ("Chips," etc., vol. ii., p. 55.) And this alleged necessity for a masculine or feminine implication is assigned as a part of the reason why these abstract nouns and collective nouns became personalized. But should not a true theory of these first steps in the evolution of thought and language show us how it happened that men acquired the seemingly-strange habit of so framing their words for sky, earth, dew, rain, etc., as to make them indicative of sex? Or, at any rate, must it not be admitted that an interpretation which, instead of assuming this habit to be "necessary," shows us how it results, thereby acquires an additional claim to acceptance? The interpretation I have indicated does this. If men and women are habitually nicknamed, and if defects of language lead their descendants to regard themselves as descendants of the things from which the names were taken, then masculine or feminine genders will be ascribed to these things according as the ancestors named after them were men or women. If a beautiful maiden known metaphorically as "the Dawn," afterward becomes the mother of some distinguished chief called "the North Wind," it will result that when, in course of

time, the two have been mistaken for the actual dawn and the actual north wind, these will, by implication, be respectively considered as male and female.

Looking, now, at the ancient myths in general, their seemingly most inexplicable trait is the habitual combination of alleged human ancestry and adventures, with the possession of personalities otherwise figuring in the heavens and on the earth, with totally non-human attributes. This enormous incongruity, not the exception but the rule, the current theory fails to explain. Suppose it to be granted that the great terrestrial and celestial objects and agents naturally become personalized; it does not follow that each of them shall have a specific human biography. To say of some star that he was the son of this king or that hero, was born in a particular place, and when grown up carried off the wife of a neighboring chief, is a gratuitous multiplication of incongruities already sufficiently great; and is not accounted for by the alleged necessary personalization of abstract and collective nouns. As looked at from our present stand-point, however, such traditions become quite natural—nay, it is clear that they will necessarily arise. When a nickname has become a tribal name, it thereby ceases to be individually distinctive; and, as already said, the process of nicknaming inevitably continues. It commences afresh with each child; and the nickname of each child is both an individual name and a potential tribal name, which may become an actual tribal name if the individual is sufficiently celebrated. Usually, then, there is a double system of distinguishing the individual; under one of which he is known by his ancestral name, and under the other of which he is known by a name suggestive of something peculiar to himself: just as we have seen happens among the Scotch clans. Consider, now, what will result when language

has reached a stage of development such that it can convey the notion of naming, and is able, therefore, to preserve traditions of human ancestry: the preservation of such traditions being furthered by those corruptions of tribal names which render them no longer suggestive of the things they were derived from. It will result that the individual will be known both as the son of such and such a man by a mother whose name was so-and-so, and also as the Crab, or the Bear, or the Whirlwind—supposing one of these to be his nickname. Such joint use of nicknames and proper names occurs in every school. Now, clearly, in advancing from the early state in which ancestors become identified with the objects they are nicknamed after, to the state in which there are proper names that have lost their metaphorical meanings, there must be passed through a state in which proper names, partially settled only, may or may not be preserved, and in which the new nicknames are still liable to be mistaken for actual names. Under such conditions there will arise (especially in the case of a distinguished man) this seemingly-impossible combination of human parentage with the possession of the non-human, or superhuman, attributes of the thing which gave the nickname. Another anomaly simultaneously disappears. The warrior may have, and often will have, a variety of complimentary nicknames—"the powerful one," "the destroyer," etc. Supposing his leading nickname has been the Sun, then when he comes to be identified by tradition with the sun, it will happen that the sun will acquire his alternative descriptive titles—the swift one, the lion, the wolf—titles not obviously appropriate to the sun, but quite appropriate to the warrior. Then there comes, too, an explanation of the remaining trait of such myths. When this identification of conspicuous persons, male and female, with con-

spicuous natural agents, has become settled, there will in due course arise interpretations of the actions of these agents in anthropomorphic terms. Suppose, for instance, that Endymion and Selene, metaphorically named, the one after the setting sun, the other after the moon, have had their human individualities merged in those of the sun and moon, through misinterpretation of metaphors; what will happen? The legend of their loves having to be reconciled with their celestial appearances and motions, these will be spoken of as results of feeling and will; so that when the sun is going down in the west, while the moon in mid-heaven is following him, the fact will be expressed by saying: "Selene loves and watches Endymion." Thus we obtain a consistent explanation of the myth without distorting it; and without assuming that it contains gratuitous fictions. We are enabled to accept the biographical part of it, if not as literal fact, still as having had fact for its root. We are helped to see how, by an inevitable misinterpretation, there grew out of a more or less true tradition, this strange identification of its personages, with objects and powers totally non-human in their aspects. And then we are shown how, from the attempt to reconcile in thought these contradictory elements of the myth, there arose the habit of ascribing the actions of these non-human things to human motives.

One further verification may be drawn from facts which are obstacles to the converse hypothesis. These objects and powers, celestial and terrestrial, which force themselves most on men's attention, have some of them several proper names, identified with those of different individuals, born at different places, and having different sets of adventures. Thus we have the sun variously known as Apollo, Endymion, Helios, Tithonos, etc.—personages having irreconcilable genealogies. Such anoma-

lies Prof. Max Müller apparently ascribes to the untrustworthiness of traditions, which are "careless about contradictions, or ready to solve them sometimes by the most atrocious expedients." ("Chips," etc., vol. ii., p. 84.) But if the evolution of the myth has been that above indicated, there exist no anomalies to be got rid of: these diverse genealogies become parts of the evidence. For we have abundant proof that the same objects furnish metaphorical names of men in different tribes. There are Duck tribes in Australia, in South America, in North America. The eagle is still a totem among the North Americans, as Mr. McLennan shows reason to conclude that it was among the Egyptians, among the Jews, and among the Romans. Obviously, for reasons that have been assigned, it naturally happened in the early stages of the ancient races, that complimentary comparisons of their heroes to the sun were frequently made. What resulted? The sun having furnished names for sundry chiefs and early founders of tribes, and local traditions having severally identified them with the sun, these tribes, when they grew, spread, conquered, or came otherwise into partial union, originated a combined mythology, which necessarily contained conflicting stories about the sun-god, as about its other leading personages. If the North-American tribes, among several of which there are traditions of a sun-god, had developed a combined civilization, there would similarly have arisen among them a mythology which ascribed to the sun several different proper names and genealogies.

Let me briefly set down the leading characters of this hypothesis which give it probability.

True interpretations of all the natural processes, organic and inorganic, that have gone on in past times, habitually trace them to causes still in action. It is thus

in Geology ; it is thus in Biology ; it is thus in Philology. Here we find this characteristic repeated. Nicknaming, the inheritance of nicknames, and, to some extent, the misinterpretation of nicknames, go among us still ; and were surnames absent, language imperfect, and knowledge as rudimentary as of old, it is tolerably manifest that results would arise like those we have contemplated.

A further characteristic of a true cause is that it accounts not only for the particular group of phenomena to be interpreted, but also for other groups. The cause here alleged does this. It equally well explains the worship of animals, of plants, of mountains, of winds, of celestial bodies, and even of appearances too vague to be considered entities. It gives us an intelligible genesis of fetichistic conceptions in general. It furnishes us with a reason for the practice, otherwise so unaccountable, of moulding the words applied to inanimate objects in such ways as to imply masculine and feminine genders. It shows us how there naturally arose the worship of compound animals, and of monsters half man half brute. And it shows us why the worship of purely anthropomorphic deities came later, when language had so far developed that it could preserve in tradition the distinction between proper names and nicknames.

A further verification of this view is, that it conforms to the general law of evolution : showing us how, out of one simple, vague, aboriginal form of belief, there have arisen, by continuous differentiations, the many heterogeneous forms of belief which have existed and do exist. The desire to propitiate the other self of the dead ancestor, displayed among savage tribes, dominantly manifested by the early historic races, by the Peruvians and Mexicans, by the Chinese at the present time, and to a considerable degree by ourselves (for what else is the wish to do

that which a lately-deceased parent was known to have desired?), has been the universal first form of religious belief; and from it have grown up the many divergent beliefs that have been referred to.

Let me add, as a further reason for adopting this view, that it immensely diminishes the apparently-great contrast between early modes of thought and our own mode of thought. Doubtless the aboriginal man differs considerably from us, both in intellect and feeling. But such an interpretation of the facts as helps us to bridge over the gap, derives additional likelihood from doing this. The hypothesis I have sketched out enables us to see that primitive ideas are not so gratuitously absurd as we suppose, and also enables us to rehabilitate the ancient myth with far less distortion than at first sight appears possible.

These views I hope to develop in the first part of "The Principles of Sociology." The large mass of evidence which I shall be able to give in support of the hypothesis, joined with the solutions it will be shown to yield of many minor problems which I have passed over, will, I think, then give to it a still greater probability than it seems now to have.

V.

SPECIALIZED ADMINISTRATION.

[FROM THE FORTNIGHTLY REVIEW, DECEMBER, 1871.]

SPECIALIZED ADMINISTRATION.

It is contrary to common-sense that fish should be more difficult to get at the sea-side than in London; but it is true, nevertheless. No less contrary to common-sense seems the truth that though, in the West Highlands, oxen are to be seen everywhere, no beef can be had without sending two or three hundred miles to Glasgow for it. Rulers who, guided by common-sense, tried to suppress certain opinions by forbidding the books containing them, never dreamed that their interdicts would cause the diffusion of these opinions; and rulers who, guided by common-sense, forbade excessive rates of interest, never dreamed that they were thereby making the terms harder for borrowers than before. When printing replaced copying, any one who had prophesied that the number of persons engaged in the manufacture of books would immensely increase, as a consequence, would have been thought wholly devoid of common-sense. And equally devoid of common-sense would have been thought any one who, when railways were replacing coaches, said that the number of horses employed in bringing passengers and goods to and from railways, would be greater than the number directly replaced by the railways. Such cases might be multiplied indefinitely. Whoso remembers that, among quite simple phenomena, causes produce effects

which are often utterly at variance with anticipation, will see how habitually this must happen among complex phenomena. That a balloon is made to rise by the same force which makes a stone fall; that the melting of ice may be greatly retarded by wrapping the ice in a blanket; that the simplest way of setting potassium on fire is to throw it into the water; are truths which those who know only the outside aspects of things would regard as manifest falsehoods. And, if, when the factors are few and simple, the results may be so absolutely opposed to seeming probability, much more will they be often thus opposed when the factors are many and involved. The saying of the French respecting political events, that "it is always the unexpected which happens"—a saying which they have been abundantly reillustrating of late—is one which legislators, and those who urge on schemes of legislation, should have ever in mind. Let us pause a moment to contemplate a seemingly-impossible set of results which social forces have wrought out.

Up to quite recent days, Language was held to be of supernatural origin. That this elaborate apparatus of symbols, so marvellously adapted for the conveyance of thought from mind to mind, was a miraculous gift, seemed unquestionable. No possible alternative way could be thought of by which there had come into existence these multitudinous assemblages of words of various orders, genera, and species, moulded into fitness for articulating with one another, and capable of being united from moment to moment into ever-new combinations, that represent with precision each idea as it arises. The supposition that, in the slow progress of things, Language grew out of the continuous use of signs—at first mainly mimetic, afterward partly mimetic, partly vocal, and at length almost wholly vocal—was an hypothesis never even con-

ceived by men in early stages of civilization; and when the hypothesis was at length conceived, it was thought too monstrous an absurdity to be even entertained. Yet this monstrous absurdity proves to be true. Already the evolution of Language has been traced back far enough to show that all its particular words, and all its leading traits of structure, have had a natural genesis; and day by day investigation makes it more manifest that its genesis has been natural from the beginning. Not only has it been natural from the beginning, but it has been spontaneous. No language is a cunningly-devised scheme of a ruler or body of legislators. There was no council of savages to invent the parts of speech, and decide on what principles they should be used. Nay, more. Going on without any authority or appointed regulation, this natural process went on without any man observing that it was going on. Solely under pressure of the need for communicating their ideas and feelings—solely in pursuit of their personal interests—men little by little developed speech in absolute unconsciousness that they were doing any thing more than pursuing their personal interests. Even now the unconsciousness continues. Take the whole population of the globe, and there is probably not above one in a million who knows that in his daily talk he is carrying on the process by which Language has been evolved.

I commence thus by way of giving the key-note to the argument which follows. My general purpose, in dwelling a moment on this illustration, has been that of showing how utterly beyond the conceptions of common-sense, literally so called, and even beyond the conceptions of cultivated common-sense, are the workings-out of sociological processes—how these workings-out are such that even those who have carried to the uttermost “the scien-

tific use of the imagination," would never have anticipated them. And my more special purpose has been that of showing how marvellous are the results indirectly and unintentionally achieved by the coöperation of men who are severally pursuing their private ends. Let me pass now to the particular topic to be here dealt with.

I have greatly regretted to see Prof. Huxley strengthening, by his deservedly high authority, a school of politicians which can scarcely be held to need strengthening—its opponents being so few. I regret it the more because, thus far, men prepared for the study of Sociology by previous studies of Biology and Psychology, have scarcely expressed any opinions on the question at issue; and that Prof. Huxley, who by both general and special culture is so eminently fitted to judge, should have come to the conclusions set forth in the last number of the *Fortnightly Review*, will be discouraging to the small number who have reached opposite conclusions. Greatly regretting however, though I do, this avowed antagonism of Prof. Huxley to a general political doctrine with which I am identified, I do not propose to make any reply to his arguments at large: being deterred partly by reluctance to dwell on points of difference with one whom I so greatly admire, and partly by the consciousness that what I should say would be mainly a repetition of what I have explicitly or implicitly said elsewhere. But with one point raised I feel obliged to deal. Prof. Huxley tacitly puts to me a question. By so doing he leaves me to choose between two alternatives, neither of which is agreeable to me. I must either, by leaving it unanswered, accept the implication that it is unanswerable, and the doctrine I hold untenable; or else I must give it an adequate answer. Little as I like it, I see that the latter of these alternatives

is that which, on public as well as on personal grounds, I must accept.

Had I been allowed to elaborate more fully the Review-article from which Prof. Huxley quotes, this question would possibly not have been raised. That article closes with the following words: "We had hoped to say something respecting the different types of social organization, and something also on social metamorphoses; but we have reached our assigned limits." These further developments of the conception—developments to be hereafter set forth in the "Principles of Sociology"—I must here sketch in outline before my answer can be made intelligible. In sketching them, I must say much that would be needless were my answer addressed to Prof. Huxley only. Bare allusions to general phenomena of organization, with which he is immeasurably more familiar than I am, would suffice. But, as the sufficiency of my answer has to be judged by the general reader, the general reader must be supplied with the requisite data—my presentation of them being under correction from Prof. Huxley if it is inaccurate.

The primary differentiation in organic structures, manifested alike in the history of each organism and in the history of the organic world as a whole, is the differentiation between outer and inner parts—the parts which hold direct converse with the environment and the parts which do not hold direct converse with the environment. We see this alike in those smallest and lowest forms improperly, though suggestively, sometimes called unicellular, and also in the next higher division of creatures which, with considerable reason, are regarded as aggregations of the lower. In these creatures the body is divisible into endoderm and ectoderm, differing very little in their characters,

but serving the one to form the digestive sac, and the other to form the outer wall of the body. As Prof. Huxley describes them in his "Oceanic Hydrozoa," these layers represent respectively the organs of nutrition and the organs of external relation—generally, though not universally, for there are exceptions, especially among parasites. In the embryos of higher types, these two layers severally become double by the splitting of a layer formed between them; and from the outer double layer is developed the body-wall with its limbs, nervous system, senses, muscles, etc.; while from the inner double layer there arise the alimentary canal and its appendages, together with the heart and lungs. Though in such higher types these two systems of organs, which respectively absorb nutriment and expend nutriment, become so far connected by ramifying blood-vessels and nerves that this division cannot be sharply made, still the broad contrast remains. At the very outset, then, there arises this separation, which implies at once a coöperation and an antagonism—a coöperation, because, while the outer organs secure for the inner organs the crude food, the inner organs elaborate and supply to the outer organs the prepared materials by which they are enable to do their work; and an antagonism, because each set of organs, living and growing at the cost of these prepared materials, cannot appropriate any portion of the total supply without diminishing by so much the supply available for the other. This general coöperation and general antagonism becomes complicated with special coöperations and special antagonisms, as fast as these two great systems of organs develop. The originally simple alimentary canal, differentiating into many parts, becomes a congeries of structures which, by coöperation, fulfil better their general function, but between which there nevertheless arise antagonisms; since each has to make good its

waste and to get matter for growth, at the cost of the general supply of nutriment available for them all. Similarly, as fast as the outer system develops into special senses and limbs, there arise among these, also, secondary coöperations and secondary antagonisms. By their variously-combined actions, food is obtained more effectually; and yet the activity of each set of muscles, or each directive nervous structure, entails a draft upon the stock of prepared nutriment which the outer organs receive, and is by so much at the cost of the rest. Thus the method of organization, both in general and in detail, is a simultaneous coöperation and opposition. All the organs unite in subserving the interests of the organism they form; and yet they have all their special interests, and compete with one another for blood.

A form of government, or control, or coördination, develops as fast as these systems of organs develop. Eventually this becomes double. A general distinction arises between the two controlling systems belonging to the two great systems of organs. Whether the inner controlling system is or is not originally derived from the outer, matters not to the argument—when developed it is in great measure independent.* And if we contemplate their re-

* Here, and throughout the discussion, I refer to these controlling systems only as they exist in the *Vertebrata*, because their relations are far better known in this great division of the animal kingdom—not because like relations do not exist elsewhere. Indeed, in the great sub-kingdom *Annulosa*, these controlling systems have relations that are extremely significant to us here. For while an inferior annulose animal has only a single set of nervous structures, a superior annulose animal (as a moth) has a set of nervous structures presiding over the viscera, as well as a more conspicuous set presiding over the organs of external relation. And this contrast is analogous to one of the contrasts between undeveloped and developed societies; for, while among the uncivilized and incipiently civilized there is but a single set of directive agencies, there are among the fully civilized, as we shall presently see, two sets of directive agencies, for the outer and inner structures respectively.

spective sets of functions, we shall perceive the origin of this distinction. That the outer organs may coöperate effectively for the purposes of catching prey, escaping danger, etc., it is needful that they should be under a government capable of directing their combined actions, now in this way and now in that, according as outer circumstances vary. From instant to instant there must be quick adjustments to occasions that are more or less new; and hence there requires a complex and centralized nervous apparatus, to which all these organs are promptly and completely obedient. The government needful for the inner system of organs is a different and much simpler one. When the food obtained by the outer organs has been put into the stomach, the coöperation required of the viscera, though it varies somewhat as the quantity or kind of food varies, has nevertheless a general uniformity; and it is required to go on in much the same way whatever the outer circumstances may be. In each case the food has to be reduced to a pulp, supplied with various solvent secretions, propelled onward, and its nutritive part taken up by absorbent surfaces. That these processes may be effective, the organs which carry them on must be supplied with fit blood; and to this end the heart and the lungs have to act with greater vigor. This visceral coöperation, carried on with this comparative uniformity, is regulated by a nervous system which is to a large extent independent of that higher and more complex nervous system controlling the external organs. The act of swallowing is, indeed, mainly effected by the higher nervous system; but, being swallowed, the food affects by its presence the local nerves, through them the local ganglia, and indirectly, through nervous connections with other ganglia, excites the rest of the viscera into coöperative activity. It is true that the functions of the sympathetic or ganglionic nervous system,

or "nervous system of organic life," as it is otherwise called, are imperfectly understood. But, since we know positively that some of its plexuses, as the cardiac, are centres of local stimulation and coördination, which can act independently, though they are influenced by higher centres, it is fairly to be inferred that the other and still larger plexuses, distributed among the viscera, are also such local and largely independent centres; especially as the nerves they send into the viscera, to join the many subordinate ganglia distributed through them, greatly exceed in quantity the cerebro-spinal fibres accompanying them. Indeed, to suppose otherwise is to leave unanswered the question, What are their functions? as well as the question, How are these unconscious visceral coördinations effected? There remains only to observe the kind of co-operation which exists between the two nervous systems. This is both a general and a special coöperation. The general coöperation is that by which either system of organs is enabled to stimulate the other to action. The alimentary canal yields through certain nervous connections the sensation of hunger to the higher nervous system; and so prompts efforts for procuring food. Conversely, the activity of the nervo-muscular system, or, at least, its normal activity, sends inward to the cardiac and other plexuses a gush of stimulus which excites the viscera to action. The special coöperation is one by which it would seem that each system puts an indirect restraint on the other. Fibres from the sympathetic accompany every artery throughout the organs of external relation, and exercise on the artery a constrictive action; and the converse is done by certain of the cerebro-spinal fibres which ramify with the sympathetic throughout the viscera: through the vagus and other nerves, an inhibitory influence is exercised on the heart, intestines, pancreas, etc. Leaving

doubtful details, however, the fact which concerns us here is sufficiently manifest. There are, for these two systems of organs, two nervous systems, in great measure independent; and, if it is true that the higher system influences the lower, it is no less true that the lower very powerfully influences the higher. The restrictive action of the sympathetic upon the circulation, throughout the nervo-muscular system, is unquestionable; and it is possibly through this that, when the viscera have much work to do, the nervo-muscular system is incapacitated in so marked a manner.*

The one further fact here concerning us is the contrast presented in different kinds of animals, between the degrees of development of these two great systems of organs that carry on respectively the outer functions and the inner functions. There are active creatures in which the locomotive organs, the organs of sense, together with the nervous apparatus which combines their actions, bear a large ratio to the organs of alimentation and their appendages; while there are inactive creatures in which these

* To meet the probable objection that the experiments of Bernard, Ludwig, and others, show that in the case of certain glands the nerves of the cerebro-spinal system are those which set up the secreting process, I would remark that in these cases, and in many others where the relative functions of the cerebro-spinal nerves and the sympathetic nerves have been studied, the organs have been those in which *sensation* is either the stimulus to activity or its accompaniment; and that from these cases no conclusion can be drawn applying to the cases of those viscera which normally perform their functions without sensation. Perhaps it may even be that the functions of those sympathetic fibres which accompany the arteries of the outer organs are simply ancillary to those of the central parts of the sympathetic system, which stimulate and regulate the viscera—ancillary in this sense, that they check the diffusion of blood in external organs when it is wanted in internal organs: cerebro-spinal inhibition (except in its action on the heart) working the opposite way. And possibly this is the instrumentality for carrying on that competition for nutriment which, as we saw, arises at the very outset between these two great systems of organs.

organs of external relation bear a very small ratio to the organs of alimentation. And a remarkable fact, here especially instructive to us, is that very frequently there occurs a metamorphosis, which has for its leading trait a great change in the ratio of these two systems—a metamorphosis which accompanies a great change in the mode of life. The most familiar metamorphosis is variously illustrated among insects. During the early or larval stage of a butterfly, the organs of alimentation are largely developed, while the organs of external relation are but little developed; and then, during a period of quiescence the organs of external relation undergo an immense development, making possible the creature's active and varied adjustments to the surrounding world, while the alimentary system becomes relatively small. On the other hand, among the lower invertebrate animals there is a very common metamorphosis of an opposite kind. When young, the creature, with scarcely any alimentary system, but supplied with limbs and sense organs, swims about actively. Presently it settles in a *habitat* where food is to be obtained without moving about, loses in great part its organs of external relation, develops its visceral system, and, as it grows, assumes a nature utterly unlike that which it originally had—a nature adapted almost exclusively to alimentation and the propagation of the species.

Let us turn now to the social organism, and the analogies of structure and function which may be traced in it. Of course these analogies between the phenomena presented in a physically coherent aggregate forming an individual, and the phenomena presented in a physically incoherent aggregate of individuals distributed over a wide area, cannot be analogies of a visible or sensible kind; but can only be analogies between the systems, or methods,

of organization. Such analogies as exist result from the one unquestionable community between the two organizations: *there is in both a mutual dependence of parts*. This is the origin of all organization; and determines what similarities there are between an individual organism and a social organism. Of course the similarities thus determined are accompanied by transcendent differences, determined, as above said, by the unlikenesses of the aggregates. One cardinal difference is that, while in the individual organism there is but one centre of consciousness capable of pleasure or pain, there are, in the social organism, as many such centres as there are individuals, and the aggregate of them has no consciousness of pleasure or pain—a difference which entirely changes the ends to be pursued. Bearing in mind this qualification, let us now glance at the parallelisms indicated.

A society, like an individual, has a set of structures fitting it to act upon its environment—appliances for attack and defence, armies, navies, fortified and garrisoned places. At the same time, a society has an industrial organization which carries on all those processes that make possible the national life. Though these two sets of organs for external activity and internal activity do not bear to one another just the same relation which the outer and inner organs of an animal do (since the industrial structures in a society supply themselves with raw materials, instead of being supplied by the external organs), yet they bear a relation otherwise similar. There is at once a coöperation and an antagonism. By the help of the defensive system the industrial system is enabled to carry on its functions without injury from foreign enemies; and by the help of the industrial system, which supplies it with food and materials, the defensive system is enabled to maintain this security. At the same time the two systems are opposed

in so far that they both depend for their existence upon the common stock of produce. Further, in the social organism, as in the individual organism, this primary coöperation and antagonism subdivides into secondary coöperations and antagonisms. If we look at the industrial organization, we see that its agricultural part and its manufacturing part aid one another by the exchange of their products, and are yet otherwise opposed to one another; since each takes of the other's products the most it can get in return for its own products. Similarly throughout the manufacturing system itself. Of the total returns secured by Manchester for its goods, Liverpool obtains as much as possible for the raw material, and Manchester gives as little as possible—the two at the same time coöperating in secreting for the rest of the community the woven fabrics it requires, and in jointly obtaining from the rest of the community the largest payment in other commodities. And thus it is in all kinds of direct and indirect ways throughout the industrial structures. Men prompted by their own needs as well as those of their children, and bodies of such men more or less aggregated, are quick to find every unsatisfied need of their fellow-men, and to satisfy it in return for the satisfaction of their own needs; and the working of this process is inevitably such that the strongest need, ready to pay the most for satisfaction, is that which draws most workers to satisfy it, so that there is thus a perpetual balancing of the needs and of the appliances which subserve them.

This brings us to the regulative structures under which these two systems of coöperating parts work. As in the individual organism, so in the social organism, the outer parts are under a rigorous central control. For adjustment to the varying and incalculable changes in the environment, the external organs, offensive and defensive,

must be capable of prompt combination; and that their actions may be quickly combined to meet each exigency as it arises, they must be completely subordinated to a supreme executive power—armies and navies must be despotically controlled. Quite otherwise is it with the regulative apparatus required for the industrial system. This, which carries on the nutrition of a society, as the visceral system carries on the nutrition of an individual, has a regulative apparatus in great measure distinct from that which regulates the external organs. It is not by any “order in council” that farmers are determined to grow so much wheat and so much barley, or to divide their land in due proportion between arable and pasture. There requires no telegram from the Home Office to alter the production of woollens in Leeds, so that it may be properly adjusted to the stocks on hand and the forthcoming crop of wool. Staffordshire produces its due quantity of pottery, and Sheffield sends out cutlery with rapidity adjusted to the consumption, without any legislative stimulus or restraint. The spurs and checks to production which manufacturers and manufacturing centres receive, have quite another origin. Partly by direct orders from distributors and partly by the indirect indications furnished by the market reports throughout the kingdom, they are prompted to secrete actively or to diminish their rates of secretion. The regulative apparatus by which these industrial organs are made to coöperate harmoniously, acts somewhat as the sympathetic does in a vertebrate animal. There is a system of communications among the great producing and distributing centres, which excites or retards as the circumstances vary. From hour to hour messages pass between all the chief provincial towns, as well as between each of them and London; from hour to hour prices are adjusted, supplies are ordered hither or

thither, and capital is drafted from place to place, according as there is greater or less need for it. All this goes on without any ministerial overseeing—without any dictation from those executive centres which combine the actions of the outer organs. There is, however, one all-essential influence which these higher centres exercise over the industrial activities—a restraining influence which prevents aggression, direct and indirect. The condition under which only these producing and distributing processes can go on healthfully is that, wherever there is work and waste, there shall be a proportionate supply of materials for repair. And securing this is nothing less than securing fulfilment of contracts. Just in the same way that a bodily organ which performs function, but is not adequately paid in blood, must dwindle, and the organism as a whole eventually suffer; so an industrial centre which has made and sent out its special commodity, but does not get adequately paid in other commodities, must decay. And when we ask what is requisite to prevent this local innutrition and decay, we find the requisite to be that agreements shall be carried out; the goods shall be paid for at the stipulated prices; that justice shall be administered.

One further leading parallelism must be described—that between the metamorphoses which occur in the two cases. These metamorphoses are analogous in so far that they are changes in the ratios of the inner and outer systems of organs; and also in so far as they take place under analogous conditions. At the one extreme we have that small and simple type of society which a wandering horde of savages presents. This is a type almost wholly predatory in its organization. It consists of little else than a co-operative structure for carrying on warfare—the industrial part is almost absent, being represented only by the women. When the wandering tribe becomes a settled tribe, an

industrial organization begins to show itself—especially where, by conquest, there has been obtained a slave-class that may be forced to labor. The predatory structure, however, still for a long time predominates. Omitting the slaves and the women, the whole body politic consists of parts organized for offence and defence, and is efficient in proportion as the control of them is centralized. Communities of this kind, continuing to subjugate their neighbors, and developing an organization of some complexity, may nevertheless retain a mainly-predatory type, with just such industrial structures as are needful for supporting the offensive and defensive structures. Of this Sparta furnished a good example. The characteristics of such a social type are these—that each member of the ruling race is a soldier; that war is the business of life; that every one is subject to a rigorous discipline fitting him for this business; that centralized authority regulates all the social activities, down to the details of each man's daily conduct; that the welfare of the State is every thing, and that the individual lives for public benefit. So long as the environing societies are such as necessitate and keep in exercise the predatory organization, these traits continue; but when, mainly by conquest and the formation of large aggregates, the predatory activity becomes less constant, and war ceases to be the occupation of every free man, the industrial structures begin to predominate. Without tracing the transition, it will suffice to take, as a sample of the pacific or industrial type, the Northern States of America before the late war. Here military organization had almost disappeared; the infrequent local assemblings of militia had turned into occasions for jollity, and every thing martial had fallen into contempt. The traits of the pacific or industrial type are these—that the central authority is relatively feeble; that it interferes

scarcely at all with the private actions of individuals; and that the State, instead of being that for the benefit of which individuals exist, has become that which exists for the benefit of individuals.

It remains to add that this metamorphosis, which takes place in societies along with a higher civilization, very rapidly retrogrades if the surrounding conditions become unfavorable to it. During the late war in America, Mr. Seward's boast—"I touch this bell, and any man in the remotest State is a prisoner of the Government" (a boast which was not an empty one, and which was by many of the Republican party greatly applauded)—shows us how rapidly, along with predatory activities, there tends to be resumed the needful type of centralized structure; and how there quickly grow up the corresponding sentiments and ideas. Our own history since 1815 has shown a double change of this kind. During the thirty years' peace, the predatory organization dwindled, the military sentiment greatly decreased, the industrial organization rapidly developed, the assertion of the individuality of the citizen became more decided, and many restrictive and despotic regulations were got rid of. Conversely, since the revival of predatory activities and structures on the Continent, our own offensive and defensive structures have been redeveloping, and the tendency toward increase of that centralized control which accompanies such structures has become marked.

And now, closing this somewhat elaborate introduction, I am prepared to deal with the question put to me. Prof. Huxley, after quoting some passages from that essay on the "Social Organism" which I have supplemented in the foregoing paragraphs; and after expressing a qualified concurrence which I greatly value as coming from so

highly fitted a judge, proceeds, with characteristic acumen, to comment on what seems an incongruity between certain analogies set forth in that essay, and the doctrine I hold respecting the duty of the State. Referring to a passage in which I have described the function of the individual brain as "that of *averaging* the interests of life, physical, intellectual, moral, social," and have compared it to the function of Parliament as "that of *averaging* the interests of the various classes in a community," adding that "a good Parliament is one in which the parties answering to these respective interests are so balanced that their united legislation concedes to each class as much as consists with the claims of the rest"—Prof. Huxley proceeds to say:

"All this appears to be very just. But if the resemblances between the body physiological and the body politic are any indication, not only of what the latter is, and how it has become what it is, but what it ought to be, and what it is tending to become, I cannot but think that the real force of the analogy is totally opposed to the negative view of State function.

"Suppose that, in accordance with this view, each muscle were to maintain that the nervous system had no right to interfere with its contraction, except to prevent it from hindering the contraction of another muscle; or each gland, that it had a right to secrete, so long as its secretion interfered with no other; suppose every separate cell left free to follow its own "interest," and *laissez-faire* Lord of all, what would become of the body physiological?"

On this question the remark I have first to make is, that if I held the doctrine of M. Proudhon, who deliberately named himself an "anarchist," and if along with this doctrine I held the above-indicated theory of social structures and functions, the inconsistency implied by the question put would be clear, and the question would be unanswerable. But since I entertain no such view as that of Proudhon—since I hold that within its proper limits governmental action is not simply legitimate but all-important

—I do not see how I am concerned with a question which tacitly supposes that I deny the legitimacy and the importance. Not only do I contend that the restraining power of the State over individuals, and bodies or classes of individuals, is requisite, but I have contended that it should be exercised much more effectually, and carried out much further, than at present.* And as the maintenance of this control implies the maintenance of a controlling apparatus, I do not see that I am placed in any difficulty when I am asked what would happen were the controlling apparatus forbidden to interfere. Further, on this general aspect of the question I have to add that, by comparing the deliberative assembly of a nation to the deliberative nervous centre of a vertebrate animal, as respectively averaging the interests of the society and of the individual, and as both doing this through processes of representation, I do not mean to *identify* the two sets of interests; for these in a society (or at least a peaceful society) refer mainly to interior actions, while in an individual creature they refer mainly to exterior actions. The “interests” to which I refer, as being averaged by a representative governing body, are the conflicting interests between class and class, as well as between man and man—conflicting interests the balancing of which is nothing but the preventing of aggression and the administration of justice.

I pass now from this general aspect of the question, which does not concern me, to a more special aspect which does concern me. Dividing the actions of governing structures, whether in bodies individual or bodies politic, into the *positively regulative* and the *negatively regulative*, or those which stimulate and direct, as distinguished from those which simply restrain, I may say that if there is raised the question—What will happen

* See “Social Statics,” chap. xxi., “The Duty of the State.”

when the controlling apparatus does not act? there are quite different replies according as one or other system of organs is referred to. If, in the individual body, the muscles were severally independent of the deliberative and executive centres, utter impotence would result: in the absence of muscular coördination, there would be no possibility of standing, much less of acting on surrounding things, and the body would be a prey to the first enemy. Properly to combine the actions of these outer organs, the great nervous centres must exercise functions that are both positively regulative and negatively regulative—must both command action and arrest action. Similarly with the outer organs of a political body. Unless the offensive and defensive structures can be despotically commanded by a central authority, there cannot be those prompt combinations and adjustments required for meeting the variable actions of external enemies. But if, instead of asking what would happen supposing the outer organs in either case were without control from the great governing centres, we ask what would happen were the inner organs (the industrial and commercial structures in the one case, and the alimentary and distributive in the other) without such control, the answer is quite different. Omitting the respiratory and some minor ancillary parts of the individual organism, to which the social organism has nothing analogous; and limiting ourselves to absorptive, elaborative, and distributive structures, which are found in both; it may, I think, be successfully contended that in neither the one case nor the other do they require the positively regulative control of the great governing centres, but only the negatively regulative. Let us glance at the facts.*

* Lest there should be any misunderstanding of the terms *positively regulative* and *negatively regulative*, let me briefly illustrate them. If a man has land, and neither cultivate it for him, partially or wholly, or dictate any or

Digestion and circulation go on very well in lunatics and idiots, though the higher nervous centres are either deranged or partly absent. The vital functions proceed properly during sleep, though less actively than when the brain is at work. In infancy, while the cerebro-spinal system is almost incapable, and cannot even perform such simple actions as those of commanding the sphincters, the visceral functions are active and regular. Nor in an adult does that arrest of cerebral action shown by insensibility, or that extensive paralysis of the spinal system which renders all the limbs immovable, prevent these functions from being carried on for a considerable time; though they necessarily begin to flag in the absence of the demand which an active system of outer organs makes upon them. These internal organs are, indeed, so little under the positively directive control of the great nervous centres, that their independence is often very inconvenient. No mandate sent into the interior stops an attack of diarrhoea; nor, when an indigestible meal excites the circulation at night, and prevents sleep, will the bidding of the brain cause the heart to pulsate more quietly. It is doubtless true that these vital processes are modified in important ways, both by general stimulation and by inhibition, from the cerebro-spinal system; but that they are mainly independent cannot, I think, be questioned. The facts that peristaltic motion of the intestines can go on when their nervous connections are cut, and that the

all of his modes of cultivation, my action is positively regulative; but, if, leaving him absolutely unhelped and unregulated in his farming, I simply prevent him from taking his neighbor's crops, or from making approach-roads over his neighbor's land, or from depositing rubbish upon it, my action is negatively regulative. There is a tolerably sharp distinction between the act of securing a citizen's ends for him or interfering with his mode of securing them, and the act of checking him when he interferes with another citizen in the pursuit of his ends.

heart (in cold-blooded vertebrates, at least) continues to pulsate for some time after being detached from the body, make it manifest that the spontaneous activities of these vital organs subserve the wants of the body at large without direction from its higher governing centres. And this is made even more manifest if it be a fact, as alleged by Schmulewitsch experimenting under Ludwig's direction, that, under duly-adjusted conditions, the secretion of bile may be kept up for some time when blood is passed through the excised liver of a newly-killed rabbit. There is an answer, not, I think, unsatisfactory, even to the crucial part of the question—"Suppose every separate cell left free to follow its own interests, and *laissez-faire* Lord of all, what would become of the body physiological?" Limiting the application of this question in the way above shown to the organs and parts of organs which carry on vital actions, it seems to me that much evidence may be given for the belief that, when they follow their respective "interests" (limited here to growing and multiplying), the general welfare will be tolerably well secured. It was proved by Hunter's experiments on a kite and a sea-gull, that a part of the alimentary canal which has to triturate harder food than that which the creature naturally eats, acquires a thicker and harder lining. When a stricture of the intestine impedes the passage of its contents, the muscular walls of the intestine above, thicken and propel the contents with greater force. When there is somewhere in the course of a circulation a serious resistance to the passage of blood, there habitually occurs hypertrophy of the heart, or thickening of its muscular walls; giving it greater power to propel the blood. And similarly, when the duct through which it discharges its contents is obstructed, the gall-bladder thickens and strengthens. These changes go on without any direction

from the brain—without any consciousness that they are going on. They are effected by the growth, or multiplication, or adaptation, of the local units, be they cells or fibres, which results from the greater action or modified action thrown upon them. The only prerequisite to this spontaneous adaptive change is, that these local units shall be supplied with extra blood in proportion as they perform extra function—a prerequisite answering to that secured by the administration of justice in a society; namely, that more work shall bring more pay. If, however, direct proof be called for that a system of organs may, by carrying on their several independent activities uncontrolled, secure the welfare of the aggregate they form, we have it in that extensive class of creatures which do not possess any nervous systems at all; and which nevertheless show, some of them, considerable degrees of activity. The Oceanic Hydrozoa supply good examples. Notwithstanding “the multiplicity and complexity of the organs which some of them possess,” these creatures have no nervous centres—no regulative apparatus by which the actions of their organs are coördinated. One of their higher kinds is composed of different parts distinguished as cœnosarc, polypites, tentacles, hydrocysts, nectocalyces, genocalyces, etc., and each of these different parts is composed of many partially-independent units—thread-cells, ciliated cells, contractile fibres, etc.; so that the whole organism is a group of heterogeneous groups, each one of which is itself a more or less heterogeneous group. And, in the absence of a nervous system, the arrangement must necessarily be such that these different units, and different groups of units, severally pursuing their individual lives without positive direction from the rest, nevertheless do, by virtue of their constitutions, and the relative positions into which they have grown, coöperate for the mainte-

nance of one another and the entire aggregate. And if this can be so with a set of organs that are not connected by nerves, much more can it be so with a set of organs which, like the viscera of a higher animal, have a special set of nervous communications for exciting one another to coöperation.

Let us turn now to the parallel classes of phenomena which the social organism presents. In it, as in the individual organism, we find that while the system of external organs must be rigorously subordinated to a great governing centre which positively regulates it, the system of internal organs needs no such positive regulation. The production and interchange by which the national life is maintained, go on as well while Parliament is not sitting as while it is sitting. When the members of the Ministry are following grouse or stalking deer, Liverpool imports, Manchester manufactures, London distributes, just as usual. All that is needful for the normal performance of these internal social functions is, that the restraining or inhibitory structures shall continue in action: these activities of individuals, corporate bodies, and classes, must be carried on in such ways as not to transgress certain conditions necessitated by the simultaneous carrying on of other activities. So long as order is maintained, and the fulfilment of contracts is everywhere enforced—so long as there is secured to each citizen, and each combination of citizens, the full return agreed upon for work done or commodities produced; and so long as each may enjoy what he obtains by labor, without trenching on his neighbor's like ability to enjoy; these functions will go on healthfully—more healthfully, indeed, than when regulated in any other way. Fully to recognize the fact, it is needful only to look at the origins and actions of the leading industrial structures. We will take two of them, the most remote from one another in their natures.

The first shall be those by which food is produced and distributed. In the fourth of his "Introductory Lectures on Political Economy," Archbishop Whately remarks that :

"Many of the most important objects are accomplished by the joint agency of persons who never think of them, nor have any idea of acting in concert; and that, with a certainty, completeness, and regularity, which probably the most diligent benevolence, under the guidance of the greatest human wisdom, could never have attained."

To enforce this truth he goes on to say : "Let any one propose to himself the problem of supplying with daily provisions of all kinds such a city as our metropolis, containing above a million of inhabitants." And then he points out the many immense difficulties of the task caused by inconstancy in the arrival of supplies; by the perishable nature of many of the commodities; by the fluctuating number of consumers; by the heterogeneity of their demands; by variations in the stocks, immediate and remote, and the need for adjusting the rate of consumption; and by the complexity in the process of distribution, required to bring due quantities of these many commodities to the homes of all citizens. And, having dwelt on these many difficulties, he finishes his picture by saying :

"Yet this object is accomplished far better than it could be by any effort of human wisdom, through the agency of men, who think each of nothing beyond his own immediate interest—who, with that object in view, perform their respective parts with cheerful zeal—and combine unconsciously to employ the wisest means for effecting an object, the vastness of which it would bewilder them even to contemplate."

But though the far-spreading and complex organization by which foods of all kinds are produced, prepared, and distributed throughout the entire kingdom, is a natural growth and not a State manufacture; though the State

does not determine where and in what quantities cereals and cattle and sheep shall be reared; though it does not arrange their respective prices so as to make supplies last until fresh supplies can come; though it has done nothing toward causing that great improvement of quality which has taken place in food since early times; though it has not the credit of that elaborate apparatus by which bread, and meat, and milk, and groceries, come round to our doors with a daily pulse that is as regular as the pulse of the heart; yet the State has not been wholly passive. It has from time to time done a great deal of mischief. When Edward I. forbade all towns to harbor forestallers, and when Edward VI. made it penal to buy grain for the purpose of selling it again, they were preventing the process by which consumption is adjusted to supply; they were doing all that could be done to insure alternations of abundance and starvation. Similarly with the many legislative attempts since made to regulate one branch or other of the food-industry, down to the corn-law sliding-scale of odious memory. For the marvellous efficiency of this organization we are indebted to private enterprise; while the derangements of it we owe to the positively-regulative action of the Government. Meanwhile, the negatively-regulative action required to keep this organization in order, Government has not duly performed. A quick and costless remedy for breach of contract, when a trader sells, as the commodity asked for, what proves to be wholly or in part some other commodity, is still wanting.

Our second case shall be the organization which so immensely facilitates commerce by transfers of claims and credits. Banks were not inventions of rulers or their counsellors. They grew up by small stages out of the transactions of traders with one another. Men who for security deposited money with goldsmiths, and took re-

ceipts; goldsmiths who began to lend out at interest the moneys left with them, and then to offer interest at lower rates to those who would deposit money; were the founders of them. And when, as presently happened, the receipt-notes became transferable by indorsement, banking commenced. From that stage upward the development, notwithstanding many hinderances, has gone on naturally. Banks have sprung up under the same stimulus which has produced all other kinds of trading bodies; the multiplied forms of credit have been gradually differentiated from the original form; and while the banking system has spread and become complex, it has also become consolidated into a whole by a spontaneous process. The clearing-house, which is a place for carrying on the banking between bankers, arose unobtrusively out of the effort to economize time and money. And when, in 1862, Sir John Lubbock—not in his legislative capacity, but in his capacity as banker—succeeded in extending the privileges of the clearing-house to country banks, the unification was made perfect; so that now the transactions of any trader in the kingdom with any other may be completed by the writing off and balancing of claims in bankers' books. This natural evolution, be it observed, has reached with us a higher phase than has been reached where the positively-regulative control of the State is more decided. They have no clearing-house in France; and, in France, the method of making payments by checks, so dominant among ourselves, is very little employed and in an imperfect way. I do not mean to imply that in England the State has been a mere spectator of this development. Unfortunately, it has from the beginning had relations with banks and bankers: not much, however, to their advantage, or that of the public. The first kind of deposit-bank was in some sense a State-bank; merchants left funds

for security at the Mint in the Tower. But when Charles I. appropriated their property without consent, and gave it back to them only under pressure, after a long delay, he destroyed their confidence. Similarly, when Charles II., in furtherance of State-business, came to have habitual transactions with the richer of the private bankers; and when, having got nearly a million and a half of their money in the Exchequer, he stole it, ruined a multitude of merchants, distressed ten thousand depositors, and made some lunatics and suicides, he gave a considerable shock to the banking system as it then existed. Though the results of State-relations with banks in later times have not been so disastrous in this direct way, yet they have been indirectly disastrous—perhaps even in a greater degree. In return for a loan, the State gave the Bank of England special privileges; and for the increase and continuance of this loan the bribe was the maintenance of these privileges—privileges which immensely hindered the development of banks. The State did worse—it led the Bank of England to the verge of bankruptcy by a forced issue of notes, and then authorized it to break its promises to pay. Nay, worse still, it prevented the Bank of England from fulfilling its promises to pay when it wished to fulfil them. The evils that have arisen from the positively-regulative action of the State on banks are too multitudinous to be here enumerated. They may be found in the writings of Tooke, Newmarch, Fullarton, Macleod, Wilson, J. S. Mill, and others. All we have here to note is, that while the enterprise of citizens in the pursuit of private ends has developed this great trading-process, which so greatly facilitates all other trading-processes, Governments have over and over again disturbed it to an almost fatal extent; and that, while they have done immense mischief of one kind by their positively-

regulative action, they have done immense mischief of another kind by failing in their negatively-regulative action. They have not done the one thing they had to do: they have not uniformly insisted on fulfilment of contract between the banker and the customer who takes his promise to pay on demand.

Between these two cases of the trade in food and the trade in money might be put the cases of other trades—all of them carried on by organizations similarly evolved, and similarly more or less deranged from time to time by State-meddling. Passing over these, however, let us turn from the positive method of elucidation to the comparative method. When it is questioned whether the spontaneous coöperation of men in pursuit of personal benefits will adequately work out the general good, we may get guidance for judgment by comparing the results achieved in societies where spontaneous coöperation has been most active and least regulated, with the results achieved in societies where spontaneous coöperation has been less trusted and State-action more trusted. Two cases, furnished by the two leading nations on the Continent, will suffice:

In France, the *École des Ponts et Chaussées* was founded in 1747 for educating civil engineers; and in 1795 was founded the *École Polytechnique*, serving, among other purposes, to give a general scientific training to those who were afterward to be more specially trained for civil engineering. Averaging the two dates, we may say that for a century France has had a State-established and State-maintained appliance for producing skilled men of this class—a double gland, we may call it, to secrete engineering faculty for public use. In England, until quite recently, we have had no institution for preparing civil engineers. Not by intention, but unconsciously, we left the furnishing of engineering faculty to take place

under the law of supply and demand—a law which at present seems to be no more recognized as applying to education, than it was recognized as applying to commerce in the days of bounties and restrictions. This, however, by the way. We have here simply to note that Brindley, Smeaton, Rennie, Telford, and the rest, down to George Stephenson, acquired their knowledge, and got their experience, without State aid or supervision. What have been the comparative results in the two nations? Space does not allow a detailed comparison: the later results must suffice. Railways originated in England, not in France. Railways spread through England faster than through France. Many railways in France were laid out and officered by English engineers. The earlier French railways were made by English contractors; and English locomotives served the French makers as models. The first French work written on locomotive engines, published about 1840 (at least I had a copy at that date), was by the Comte de Pambour, who had studied in England, and who gave in his work nothing whatever but drawings and descriptions of the engines of English makers.

The second illustration is supplied to us by the model nation, now so commonly held up to us for imitation. Let us contrast London and Berlin in respect of an all-essential appliance for the comfort and health of citizens. When, at the beginning of the seventeenth century, the springs and local conduits, supplemented by water-carriers, failed to supply the Londoners; and when the water-famine, for a long time borne, had failed to make the Corporation do more than propose schemes, and had not spurred the central government to do any thing; Hugh Myddleton, a merchant citizen, took in hand himself the work of bringing the New River to Islington. When he had half-completed the work, the king came to his help—not, in-

deed, in his capacity of ruler, but in the capacity of speculator, investing his money with a view to profit: his share being disposed of by his successor after the formation of the New River Company, which finished the distributing system. Subsequently, the formation of other water-companies, utilizing other sources, has given London a water-supply that has grown with its growth. What, meanwhile, happened at Berlin? Did there in 1618, when Hugh Myddleton completed his work, grow up there a like efficient system? Not at all. The seventeenth century passed, the eighteenth century passed, the middle of the nineteenth century was reached, and still Berlin had no water-supply like that of London. What happened then? Did the paternal government at length do what had been so long left undone? No. Did the citizens at length unite to secure the desideratum? No. It was finally achieved by the citizens of another nation, more accustomed to coöperate in securing their own profits by ministering to public needs. In 1845 an English company was formed for giving Berlin an adequate water-supply; and the work was executed by English contractors—Messrs. Fox and Crampton.

Should it be said that great works of ancient nations, in the shape of aqueducts, roads, etc., might be instanced in proof that State agency secures such ends, or should it be said that a comparison between the early growth of inland navigation on the Continent, and its later growth here, would be to our disadvantage, I reply that, little as they at first seem so, these facts are congruous with the general doctrine. While the predatory social type is dominant, and the industrial organization but little developed, there is but one coördinating agency for regulating both sets of activities, just as we saw happens with the lower types of individual organisms. It is only when a consid-

erable advance has been made in that metamorphosis which develops the industrial structures at the expense of the predatory structures, and which brings along with it a substantially independent coördinating agency for the industrial structures—it is only then that the efficiency of these spontaneous coöperations for all purposes of internal social life becomes greater than the efficiency of the central governing agency.

Possibly it will be said that, though, for subserving material needs, the actions of individuals, stimulated by necessity and made quick by competition, are demonstrably adequate, they are not adequate for subserving other needs. I do not see, however, that the facts justify this position. We have but to glance around to find in abundance similarly-generated appliances for satisfying our higher desires, as well as our lower desires. The fact that the Fine Arts have not thriven here as much as in some Continental countries is ascribable to natural character, to absorption of our energies in other activities, and to the repressive influence of chronic asceticism, rather than to the absence of fostering agencies: these the interests of individuals have provided in abundance. Literature, in which we are second to none, owes, with us, nothing to State aid. The poetry which will live is poetry which has been written without official prompting, and, though we have habitually had a prize-poet, paid to write loyal verses, it may be said, without disparaging the present one, that a glance over the entire list does not show any benefit derived by poetry from State patronage. Nor are other forms of literature any more indebted to State patronage. It was because there was a public liking for fiction that fiction began to be produced, and the continued public liking causes a continued production, including, along with much that is worthless, much that could not have

been made better by any academic or other supervision. And the like holds of biographies, histories, scientific books, etc. Or, as a still more striking case of an agency that has grown up to meet a non-material want, take the newspaper press. What has been the genesis of this marvellous appliance, which each day gives us an abstract of the world's life the day before? Under what promptings have there been got together its staffs of editors, sub-editors, article-writers, reviewers; its reporters of parliamentary debates, of public meetings, of law cases and police cases; its critics of music, theatricals, paintings, etc.; its correspondents in all parts of the world? Who devised and brought to perfection this system which at six o'clock in the morning gives the people of Edinburgh a report of the debates that ended at two or three o'clock in the House of Commons, and at the same time tells them of events that occurred the day before in America? It is not a Government invention. It is not a Government suggestion. It has not been in any way improved or developed by legislation. On the contrary, it has grown up in spite of many hinderances from the Government, and burdens which the Government has imposed on it. For a long time the reporting of parliamentary debates was resisted; for generations censorships and prosecutions kept newspapers down, and for several subsequent generations the laws in force negatived a cheap press, and the educational benefits accompanying it. From the war-correspondent, whose letters give to the very nations that are fighting their only trustworthy accounts of what is being done, down to the newsboy who brings round the third edition with the latest telegrams, the whole organization is a product of spontaneous coöperation among private individuals, aiming to benefit themselves by ministering to the intellectual needs of their fellows—aiming also, not a

few of them, to benefit their fellows by giving them clearer ideas and a higher standard of right. Nay, more than this is true. While the press is not indebted to the Government, the Government is enormously indebted to the press, without which, indeed, it would stumble daily in the performance of its functions. This agency, which the State once did its best to put down, and has all along impeded, now gives to the ministers news in anticipation of their dispatches, gives to members of Parliament a guiding knowledge of public opinion, and enables them to speak from the House of Commons benches to their constituents, and gives to both legislative chambers a full record of their proceedings.

I do not see, therefore, how there can be any doubt respecting the sufficiency of agencies thus originating. The truth, that, in this condition of mutual dependence brought about by social life, there inevitably grow up arrangements such that each secures his own ends by ministering to the ends of others, seems to have been for a long time one of those open secrets which remain secret because they are so open; and even now the conspicuousness of this truth seems to cause an imperfect consciousness of its full meaning. The evidence shows, however, that, even were there no other form of spontaneous coöperation among men than that dictated by self-interest, it might be rationally held that this, under the negatively-regulative control of a central power, would work out, in proper order, the appliances for satisfying all needs, and carrying on healthfully all the essential social functions.

But there is a further kind of spontaneous coöperation, arising, like the other, independently of State action, which takes a large share in satisfying certain classes of needs. Familiar though it is, this kind of spontaneous coöperation is habitually ignored in sociological discussions.

Alike from newspaper articles and parliamentary debates, it might be inferred that, beyond the force due to men's selfish activities, there is no other social force than the governmental force. There seems to be a deliberate omission of the fact that, in addition to their selfish interests, men have sympathetic interests, which, acting individually and coöperatively, work out results scarcely less remarkable than those which the selfish interests work out. It is true that, during the earlier phases of social evolution, while yet the type is mainly predatory, agencies thus produced do not exist: among the Spartans, I suppose, there were few, if any, philanthropic agencies. But as there arise forms of society leading toward the pacific type—forms in which the industrial organization develops itself, and men's activities become of a kind that do not perpetually sear their sympathies—these structures which their sympathies generate become many and important. To the egoistic interests, and the coöperations prompted by them, there come to be added the altruistic interests and their coöperations; and, what the one set fails to do, the other does. That, in his presentation of the doctrine he opposes, Prof. Huxley did not set down the effects of fellow-feeling as supplementing the effects of self-regarding feelings, surprises me the more, because he displays fellow-feeling himself in so marked a degree, and shows in his career how potent a social agency it becomes. Let us glance rapidly over the results wrought out among ourselves by individual and combined "altruism"—to employ M. Comte's useful word.

Though they show a trace of this feeling, I will not dwell upon the numerous institutions by which men are enabled to average the chances throughout life by insurance societies, which provide against the evils entailed by premature deaths, accidents, fires, wrecks, etc., for these

are mainly mercantile and egoistic in their origin. Nor will I do more than name those multitudinous Friendly Societies that have arisen spontaneously among the working-classes to give mutual aid in time of sickness, and which the Commission now sitting is showing to be immensely beneficial, notwithstanding their defects; for these also, though containing a larger element of sympathy, are prompted chiefly by anticipations of personal benefits. Leaving these, let us turn to the organizations in which altruism is more decided—taking first that by which religious ministrations are carried on. Throughout Scotland and England, cut away all that part of it which is not established by law—in Scotland, the Episcopal Church, the Free Church, the United Presbyterians, and other Dissenting bodies; in England, the Wesleyans, Independents, and the various minor sects. Cut off, too, from the Established Church itself, all that part added in recent times by voluntary zeal, made conspicuous enough by the new steeples that have been rising on all sides; and then also take out, from the remainder of the Established Church, that energy which has during these three generations been infused into it by competition with the Dissenters: so reducing it to the degraded, inert state in which John Wesley found it. Do this, and it becomes manifest that more than half the organization, and immensely more than half its function, is extra-governmental. Look round, again, at the multitudinous institutions for mitigating men's ills—the hospitals, dispensaries, almshouses, and the like—the various benevolent and mendicity societies, etc., of which London alone contains between six and seven hundred. From our vast St. Thomas's, exceeding the palace of the Legislature itself in bulk, down to Dorcas societies, and village clothing-clubs, we have charitable agencies, many in kind and

countless in number, which supplement, perhaps too largely, the legally-established one, and which, whatever evil they may have done along with the good, have done far less evil than the Poor-Law organization did before it was reformed in 1834. Akin to these are still more striking examples of power in agencies thus originating, such as that furnished by the Antislavery Society, which carried the emancipation of the slaves, notwithstanding the class opposition so predominant in the Legislature. And, if we look for more recent like instances, we have them in the organization which promptly and efficiently dealt with the cotton-famine in Lancashire, and in that which last year ministered to the wounded and distressed in France. Once more, consider our educational system as it existed till within these few years. Such part of it as did not consist of private schools, carried on for personal profit, consisted of schools or colleges set up or maintained by men for the benefit of their fellows, and the posterity of their fellows. Omitting the few founded or partially founded by kings, the numerous endowed schools scattered throughout the kingdom originated from altruistic feelings (so far, at least, as they were not due to egoistic desires for good places in the other world). And then, after these appliances for teaching the poor had been almost entirely appropriated by the rich, whence came the remedy? Another altruistic organization grew up for educating the poor, struggled against the opposition of the Church and the governing classes, eventually forced these to enter into competition, and produce like altruistic organizations, until by school systems, local and general, ecclesiastical, dissenting, and secular, the mass of the people had been brought from a state of almost entire ignorance to one in which nearly all of them possessed the rudiments of knowledge. But for these spontaneously-

developed agencies, ignorance would have been universal. Not only such knowledge as the poor now possess, not only the knowledge of the trading-classes, not only the knowledge of those who write books and articles for the press, but the knowledge of those who carry on the business of the country as ministers and legislators, has been derived from these extra-governmental agencies, egoistic or altruistic. Yet now, strangely enough, the cultured intelligence of the country has taken to spurning its parent; and that to which it owes both its existence and the consciousness of its own value is pooh-poohed as though it had done, and could do, nothing of importance. One other fact let me add: While such teaching organizations, and their results in the shape of enlightenment, are due to these spontaneous agencies, to such agencies also are due the great improvements in the quality of the culture now happily beginning to take place. The spread of scientific knowledge, and of the scientific spirit, has not been brought about by laws and officials. Our scientific societies have arisen from the spontaneous coöperation of those interested in the accumulation and diffusion of the kinds of truth they respectively deal with. Though the British Association has from time to time obtained certain small subsidies, their results in the way of advancing science have borne but an extremely small ratio to the results achieved without any such aid. If there needs a conclusive illustration of the power of agencies thus arising, we have it in the history and achievements of the Royal Institution. From this, which is a product of altruistic coöperation and which has had for its successive professors Young, Davy, Faraday, and Tyndall, there has come a series of brilliant discoveries which it would be difficult to parallel by a series from any State-nurtured institution.

I hold, then, that forced, as men in society are, to seek satisfaction of their own wants by satisfying the wants of others; and led as they also are by sentiments which social life has fostered, to satisfy many wants of others irrespective of their own; they are moved by two sets of forces which, working together, will amply suffice to carry on all needful activities; and I think the facts fully justify this belief. It is true that, *a priori*, one would not have supposed that by their unconscious coöperations men could have wrought out such results, any more than one would have supposed, *a priori*, that by their unconscious coöperation they, could have evolved Language. But reasoning *a posteriori*, which it is best to do when we have the facts before us, it becomes manifest that they can do this; that they have done it in very astonishing ways; and perhaps they may do it hereafter in ways still more transcending expectation. Scarcely any scientific generalization has, I think, a broader inductive basis than we have for the belief that these egoistic and altruistic feelings are powers which, taken together, amply suffice to originate and carry on all the activities which constitute healthy national life: the only prerequisite being, that they shall be under the negatively-regulative control of a central power—that the entire aggregate of individuals, acting through the legislature and executive as its agents, shall put upon each individual, and group of individuals, the restraints needful to prevent aggression, direct and indirect.

And here I might go on to supplement the argument by showing that the immense majority of the evils which government aid is invoked to remedy, are evils which arise immediately or remotely because it does not perform properly its negatively-regulative function. From the waste of, probably, £100,000,000 of national capital in unproductive railways, for which the Legislature is respon-

sible by permitting the original proprietary contracts to be broken,* down to the railway accidents and loss of life caused by unpunctuality, which would never have grown to its present height were there an easy remedy for breach of contract between company and passenger; nearly all the vices of railway management have arisen from the non-administration of justice. And everywhere else we shall find that, were the restraining action of the State prompt, effective, and costless to those aggrieved, the pleas put in for positive regulation would nearly all disappear.

I am thus brought naturally to remark on the title given to this theory of State functions. That "Administrative Nihilism" adequately describes the view set forth by Von Humboldt, may be: I have not read his work. But I cannot see how it adequately describes the doctrine I have been defending; nor do I see how this can be properly expressed by the more positive title, "police-government." The conception suggested by police-government does not include the conception of an organization for external protection. So long as each nation is given to burglary, I quite admit each other nation must keep guards, under the forms of army or navy, or both, to prevent burglars from breaking in. And the title police-government does not in its ordinary acceptation comprehend these offensive and defensive appliances needful for dealing with foreign enemies. At the other extreme, too, it falls short of the full meaning to be expressed. While it duly conveys the idea of an organization required for checking and punishing criminal aggression, it does not convey any idea of the no less important organization required for dealing with civil aggression—an organization

* See Essay on "Railway Morals and Railway Policy."

quite essential for properly discharging the negatively-regulative function. Though latent police-force may be considered as giving their efficiency to legal decisions on all questions brought into *nisi prius* courts, yet, since here police-force rarely comes into visible play, police-government does not suggest this very extensive part of the administration of justice. Far from contending for a *laissez-faire* policy in the sense which the phrase commonly suggests, I have contended for a more active control of the kind distinguishable as negatively regulative. One of the reasons I have urged for excluding State action from other spheres, is, that it may become more efficient within its proper sphere. And I have urged that the wretched performance of its duties within its proper sphere continues, because it is mainly occupied with other duties.* The facts that often, in bankruptcy cases, three-fourths and more of the assets go in costs; that creditors are led by the expectation of great delay and a miserable dividend to accept almost any composition offered; and that so the bankruptcy-law offers a premium to roguery; are facts which would long since have ceased to be facts, had citizens been mainly occupied in getting an efficient judicial system. If the due performance by the State of its all-essential function had been the question on which elections were fought, we should not see, as we now do, that a shivering cottager who steals palings for firewood, or a hungry tramp who robs an orchard, gets punishment in more than the old Hebrew measure, while great financial frauds which ruin their thousands bring no punishments. Were the negatively-regulative function of the State in internal affairs dominant in the thoughts of men, within the Legislature and without, there would be tolerated no such treatment as that suffered lately by Messrs. Walker, of Corn-

* See Essay on "Over-Legislation."

hill; who, having been robbed of £6,000 worth of property and having spent £950 in rewards for apprehending thieves, and in prosecuting them, cannot get back the proceeds of their property found on the thieves—who bear the costs of administering justice, while the Corporation of London makes £940 profit out of their loss. It is in large measure because I hold that these crying abuses and inefficiencies, which everywhere characterize the administration of justice, need more than any other evils to be remedied; and because I hold that remedy of them can go on only as fast as the internal function of the State is more and more restricted to the administration of justice; that I take the view which I have been reëxplaining. *It is a law universally illustrated by organizations of every kind, that, in proportion as there is to be efficiency, there must be specialization, both of structure and function—specialization which, of necessity, implies accompanying limitation.* And, as I have elsewhere argued, the development of representative government is the development of a type of government fitted above all others for this negatively-regulative control, and, above all others, ill fitted for positively-regulative control.* This doctrine, that while the negatively-regulative control should be extended and made better, the positively-regulative control should be diminished, and that the one change implies the other, may be properly called the doctrine of Specialized Administration—if it is to be named from its administrative aspect. I regret that my presentation of this doctrine has been such as to lead to misinterpretation. Either it is that I have not adequately explained it, which, if true, surprises me, or else it is that the space occupied in seeking to show what are not the duties of the State is so much greater than the space occupied in defining its

* See Essay on "Representative Government what is it good for?"

duties, that these last make but little impression. In any case, that Prof. Huxley should have construed my view in the way he has done, shows me that it needs fuller exposition ; since, had he put upon it the construction I intended, he would not, I think, have included it under the title he has used, nor would he have seen it needful to raise the question I have endeavored to answer.

POSTSCRIPT.—Since the above article was written, a fact of some significance in relation to the question of State-management has come under my notice. There is one department, at any rate, in which the State succeeds well—the Post-Office. And this department is sometimes instanced as showing the superiority of public over private administration.

I am not about to call in question the general satisfactoriness of our postal arrangements ; nor shall I contend that this branch of State-organization, now well-established, could be replaced with advantage. Probably the type of our social structure has become, in this respect, so far fixed that a radical change would be injurious. In dealing with those who make much of this success, I have contented myself with showing that the developments which have made the Post-Office efficient, have not originated with the Government, but have been thrust upon it from without. I have in evidence cited the facts that the mail-coach system was established by a private individual, Mr. Palmer, and lived down official opposition ; that the reform originated by Mr. Rowland Hill had to be made against the wills of *employés* ; and, further, I have pointed out that, even as it is, a large part of the work is done by private enterprise—that the Government gets railway-companies to do for it most of the inland carriage, and steam-boat companies the

outland carriage: contenting itself with doing the local collection and distribution.

Respecting the general question whether, in the absence of our existing postal system, private enterprise would have developed one as good or better, I have been able to say only that analogies like that furnished by our newspaper-system, with its efficient news-vending organization, warrant us in believing that it would. Recently, however, I have been shown both that private enterprise is capable of this, and that, but for a legal interdict, it would have done long ago what the State has but lately done. Here is the proof:—

“To facilitate correspondence between one part of London and another was not originally one of the objects of the Post-Office. But, in the reign of Charles II., an enterprising citizen of London, William Dockwray, set up, at great expense, a penny post, which delivered letters and parcels six or eight times a-day in the busy and crowded streets near the Exchange, and four times a-day in the outskirts of the capital. . . . As soon as it became clear that the speculation would be lucrative, the Duke of York complained of it as an infraction of his monopoly, and the courts of law decided in his favour.”—*Macaulay*, i. 387-8.

Thus it appears that two centuries since, private enterprise initiated a local postal system, similar, in respect both of cheapness and frequency of distribution, to that lately-established one boasted of as a State-success. Judging by what has happened in other cases with private enterprises that had small beginnings, we may infer that the system thus commenced, would have developed throughout the kingdom as fast as the needs pressed and the possibilities allowed. So far from being indebted to the State, we have reason to believe that, but for State-repression, we should have obtained a postal organization like our present one generations ago!

VI.

"THE COLLECTIVE WISDOM."

[FROM THE READER FOR APRIL 15, 1886.]

“THE COLLECTIVE WISDOM.”

A TEST of senatorial capacity is a desideratum. We rarely learn how near the mark or how wide of the mark the calculations of statesmen are ; the slowness and complexity of social changes, hindering, as they do, the definite comparison of results with anticipations. Occasionally, however, parliamentary decisions admit of being definitely valued. One which was arrived at a few weeks ago furnished a measure of legislative judgment too significant to be passed by.

On the edge of the Cotswolds, overhanging the valley of the Severn, occur certain springs, which, as they happen to be at the end of the longest of the hundred streams which join to form the Thames, have been called by a poetical fiction “the sources of the Thames.” Names, even when poetical fictions, suggest conclusions ; and conclusions drawn from words instead of facts are equally apt to influence conduct. Thus it happened that, when, recently, there was formed a company for supplying Cheltenham and some other places from these springs, great opposition arose. The *Times* published a paragraph, headed, “Threatened Absorption of the Thames,” stating that the application of this company to Parliament had “caused

some little consternation in the city of Oxford, and will, doubtless, throughout the valley of the Thames ;" and that "such a measure, if carried out, will diminish the water of that noble river a million of gallons per day." A million is an alarming word—suggests something necessarily vast. Translating words into thoughts, however, would have calmed the fears of the *Times* paragraphist. Considering that a million gallons would be contained by a room fifty-six feet cube, the nobility of the Thames would not be much endangered by the deduction. The simple fact is, that the current of the Thames, above the point at which the tides influence it, discharges in twenty-four hours eight hundred times this amount.

When the bill of this proposed water company was brought before the House of Commons for second reading, it became manifest that the imaginations of members were affected by such expressions as the "sources of the Thames," and "a million gallons daily," in much the same way as the imaginations of the ignorant. Though the quantity of water proposed to be taken bears, to the quantity which runs over Teddington weir, about the same ratio that a yard bears to half a mile, it was thought by many members that its loss would be a serious evil. No method of measurement would be accurate enough to detect the difference between the Thames as it now is, and the Thames *minus* the Cerney springs ; and yet it was gravely stated in the House that, were the Thames diminished in the proposed way, "the proportion of sewage to pure water would be seriously increased." Taking a minute out of twelve hours, would be taking as large a proportion as the Cheltenham people wish to take from the Thames. Nevertheless, it was contended that to let Cheltenham have this quantity would be "to rob the towns along the banks of the Thames of their rights." Though, of the Thames flow-

ing by each of these towns, some 999 parts out of 1,000 pass by unused, it was held that a great injustice would be committed were one or two of these 999 parts appropriated by the inhabitants of a town who can now obtain daily but four gallons of foul water per head.

But the apparent inability thus shown to think of causes and effects in something like their true quantitative relations, was still more conspicuously shown. It was stated by several members that the Thames Navigation Commissioners would have opposed the bill if the commission had not been bankrupt; and this hypothetical opposition appeared to have weight. If we may trust the reports, the House of Commons listened with gravity to the assertion of one of its members, that, if the Cerney springs were diverted, "shoals and flats would be created." Not a laugh nor a cry of "Oh! oh," appears to have been produced by the prophecy, that the volume and scouring power of the Thames would be seriously affected by taking away from it twelve gallons per second! The whole quantity which these springs supply would be delivered by a current moving through a pipe one foot in diameter at the rate of less than two miles per hour. Yet, when it was said that the navigability of the Thames would be injuriously affected by this deduction, there were no shouts of derision. On the contrary, the House rejected the Cheltenham Water Bill by a majority of one hundred and eighteen to eighty-eight. It is true that the data were not presented in the above shape. But the remarkable fact is, that, even in the absence of a specific comparison, it should not have been at once seen that the water of springs, which drain but a few square miles at most, can be but an inappreciable part of the water which runs out of the Thames basin, extending over several thousand square miles. In itself, this is a matter of small moment. It interests us here simply as

an example of legislative judgment. The decision is one of those small holes through which a wide prospect may be seen, and a disheartening prospect it is. In a very simple case there is here displayed a scarcely credible inability to see how much effect will follow so much cause; and yet the business of the assembly exhibiting this inability is that of dealing with causes and effects of an extremely involved kind. All the processes going on in society arise from the concurrences and conflicts of human actions, which are determined in their nature and amounts by the human constitution as it now is—are as much results of natural causation as any other results, and equally imply definite quantitative relations between causes and effects. Every legislative act presupposes a diagnosis and a prognosis; both of them involving estimations of social forces and the work done by them. Before it can be remedied, an evil must be traced to its source in the motives and ideas of men as they are, living under the social conditions which exist—a problem requiring that the actions tending toward the result shall be identified, and that there shall be something like a true idea of the quantities of their effects as well as the qualities. A further estimation has then to be made of the kinds and degrees of influence that will be exerted by the additional factors which the proposed law will set in motion: what will be the resultants produced by the new forces coöperating with preëxisting forces—a problem still more complicated than the other.

We are quite prepared to hear the unhesitating reply, that men incapable of forming an approximately true judgment on a matter of simple physical causation may yet be very good law-makers. So obvious will this be thought by most, that a tacit implication to the contrary will seem to them absurd; and that it will seem to them absurd is one of the many indications of the profound ignorance that

prevails. It is true that mere empirical generalizations which men draw from their dealings with their fellows suffice to give them some ideas of the proximate effects which new enactments will work: and, seeing these, they think they see as far as needful. Discipline in physical science, however, would help to show them the utter inadequacy of calculating consequences based on simple data. And if there needs proof that calculations of consequences so based are inadequate, we have it in the enormous labor annually entailed on the Legislature in trying to undo the mischiefs it has previously done.

Should any say that it is useless to dwell on this incompetency, seeing that the House of Commons contains the select of the nation, than whose judgments no better are to be had, we reply, that there may be drawn two inferences which have important practical bearings. In the first place, we are shown how completely the boasted intellectual discipline of our upper classes fails to give them the power of following out in thought, with any correctness, the sequences of even simple phenomena, much less those of complex phenomena. And, in the second place, we may draw the corollary, that if the sequences of those complex phenomena which societies display, difficult beyond all others to deal with, are so unlikely to be understood by them, they may advantageously be restricted in their interferences with them.

In one direction, especially, shall we see reason to resist the extension of legislative action. There has of late been urged the proposal that the class contemptuously described as dividing its energies between business and bethels shall have its education regulated by the class which might, with equal justice, be described as dividing its energies between club-rooms and game preserves. This scheme does not seem to us a hopeful one. Considering

that during the last half century our society has been remoulded by ideas that have come from the proposed pupil, and have had to overcome the dogged resistance of the proposed teacher, the propriety of the arrangement is not obvious. And if the propriety of the arrangement is not obvious on the face of it, still less obvious does it become when the competency of the proposed teacher comes to be measured. British intelligence, as distilled through the universities and redistilled into the House of Commons, is a product admitting of such great improvement in quality, that we should be sorry to see the present method of manufacture extended and permanently established.

VII.

POLITICAL FETICHISM.

(FROM THE READER FOR JUNE 10, 1865.)

POLITICAL FETICHISM.

A HINDOO, who, before beginning his day's work, salaams to a bit of plastic clay, out of which, in a few moments, he has extemporized a god in his own image, is an object of amazement to the European. We read with surprise bordering on scepticism of worship done by machinery, and of prayers which owe their supposed efficacy to the motion given by the wind to the papers they are written on. When told how certain of the Orientals, if displeased with their wooden deities, take them down and beat them, men laugh and wonder.

Why should men wonder? Kindred superstitions are exhibited by their fellows every day—superstitions that are, indeed, not so gross, but are intrinsically of the same nature. There is an idolatry which, instead of carving the object of its worship out of dead matter, takes humanity for its raw material, and expects, by moulding a mass of this humanity into a particular form, to give it powers or properties quite different from those it had before it was moulded. In the one case as in the other, the raw material is, as much as may be, disguised; there are decorative appliances by which the savage helps himself to think that he has something more than wood before him; and

the citizen gives to the political agencies he has helped to create, such imposing externals and distinctive names expressive of power as serve to strengthen his belief in the benefits prayed for. Some faint reflection of that "divinity" which "doth hedge a king" spreads down through every state department to the lowest rank, so that, in the eyes of the people, even the policeman puts on along with his uniform a certain indefinable power—nay, the mere dead symbols of authority excite reverence in spite of better knowledge; a legal form of words seems to have something especially binding in it, and there is a preternatural efficiency about a government-stamp.

The parallelism is still more conspicuous between the persistency of faith in the two cases, notwithstanding perpetual disappointments. It is difficult to perceive how graven images, that have been thrashed for not responding to their worshipper's desire, should still be revered and petitioned; but the difficulty of conceiving this is diminished when we remember how, in their turns, all the idols in our political pantheon undergo castigations for failing to do what was expected of them, and are nevertheless daily looked up to in the trustful hope that future prayers will be answered. The stupidity, the slowness, the perversity, the dishonesty of officialism, in one or other of its embodiments, are demonstrated afresh in almost every newspaper that issues. Probably half the leading articles written have for texts some absurd official blunder, some exasperating official delay, some astounding corruption, some gross official injustice, some incredible official extravagance. And yet these whippings, in which balked expectation continually vents itself, are immediately followed by renewed faith; the benefits that have not come are still hoped for, and prayers for others are put up. Along with proof that the old State machines are in themselves inert, and owe

such powers as they seem to have to the public opinion that sets their parts in motion, there are continually proposed new state machines of the same type as the old. This inexhaustible credulity is counted on by men of the widest political experience. Lord Palmerston, who probably knows his public better than any other man, lately said, in reply to a charge made in the House—"I am quite convinced that no person belonging to the government, in whatever department he may be, high or low, would be guilty of any breach of faith in regard to any matter confided to him." To assert as much in the face of facts continually disclosed, implies that Lord Palmerston knows well that men's faith in officialism survives all adverse evidence.

In which case are the hopes from state agency realized? One might have thought that the vital interests at stake would have kept the all-essential apparatus for administering justice up to its work; but they do not. On the one hand, here is a man wrongly convicted, and afterward proved to be innocent, who is "pardoned" for an offence he did not commit; and has this as consolation for his unmerited suffering. On the other hand, here is a man whose grave delinquencies a Lord Chancellor overlooks, on partial restitution being made—nay, more, countenances the granting of a pension to him. Proved guilt is rewarded, while proved innocence is left without compensation for pains borne and fortunes blasted! This marvellous antithesis, if not often fully paralleled in the doings of officialism as administrator of justice, is, in endless cases, paralleled in part. The fact that imprisonment is the sentence on a boy for stealing a pennyworth of fruit, while thousands of pounds may be transferred from a public into a private purse without any positive punishment being adjudged, is an anomaly kept in countenance by numerous

other judicial acts. Theoretically, the state is a protector of the rights of subjects; practically, the state continually plays the part of aggressor. Though it is a recognized principle of equity that he who makes a false charge shall pay the costs of the defence, yet, until quite recently, the Crown has persisted in refusing to pay the costs of citizens against whom it has brought false charges. Nay, worse, deliberate attempts used to be made to establish charges by corrupt means. Within the memory of those now living, the Crown, in excise-prosecutions, bribed juries; when the verdict was for the Crown, the custom was to give double fees; and the practice was not put an end to until the counsel for a defendant announced in open court that the jury should have double fees if their verdict was for his client!

Not alone in the superior parts of our judicial apparatus is this ill-working of officialism so thrust on men's notice as to have become proverbial; not alone in the life-long delays and ruinous expenses that have made Chancery a word of dread; not alone in the extravagances of bankruptcy courts, that lead creditors carefully to shun them; not alone in that uncertainty which makes men submit to gross injustice rather than risk the still grosser injustice which the law will, as likely as not, inflict on them; but down through the lower divisions of the judicial apparatus are all kinds of failures and absurdities daily displayed. It may be fairly urged in mitigation of the sarcasms current respecting the police, that among so many men cases of misconduct and inefficiency must be frequent; but we might have expected the orders under which they act to be just and well considered. Very little inquiry shows that they are not. There is a story current that, in the accounts of an Irish official, a small charge for a telegram, which an emergency had called for, was objected to at the head office in

London, and, after a long correspondence, finally allowed, but with the understanding that in future no such item would be passed, unless the department in London had authorized it! We cannot vouch for this story, but we can vouch for something which gives credibility to it. A friend who had been robbed by his cook went to the police-office, detailed the case, gave good reasons for inferring the direction of her flight, and requested the police to telegraph, that she might be intercepted. He was told, however, that they could not do this without authority; and this authority was not to be had without a long delay. The result was that the thief, who had gone to the town at the time supposed, escaped, and has not since been heard of. Take another function assumed by the police—the regulation of traffic. Daily, all through London, ten thousand fast-going vehicles, with hard-pressed men of business in them, are stopped by a sprinkle of slow-going carts and wagons. Greater speed in these comparatively few carts and wagons, or limitation of them to early and late hours, would immensely diminish the evil. But, instead of dealing with these really great hinderances to traffic, the police deal with that which is practically no hindrance. Men with advertisement-boards were lately forbidden to walk about, on the groundless plea that they are in the way; and incapables, prevented thus from getting a shilling a day, were driven into the ranks of paupers and thieves. Worse cases may be observed. For years past there has been a feud between the police and the orange girls, who are chased hither and thither because they are said to be obstructions to foot-passengers. Meanwhile, in some of the chief thoroughfares, may constantly be seen men standing with toys, which they delude children and their parents into buying by pretending that the toys make certain sounds, which they themselves make, and when the police, quietly

watching this obtainment of money under false pretences, are asked why they do not interfere, they reply that they have no orders. Admirable contrast ! Trade dishonestly, and you may collect a small crowd on the pavement without complaint being made that you interrupt the traffic. Trade honestly, and you shall be driven from the pavement-edge as an impediment—shall be driven to dishonesty !

One might have thought that the notorious inefficiency of officialism as a protector against injustice would have made men skeptical of its efficiency in other things. If here, where citizens have such intense interests in getting a function well discharged, they have failed through all these many centuries in getting it well discharged—if this agency, which is in theory the guardian of each citizen, is in so many cases his enemy, that going to law is suggestive of impoverishment and possible ruin, it might have been supposed that officialism would scarcely be expected to work in all directions where the interests at stake are less intense. But so strong is the influence of political fetichism, that neither these experiences, nor the parallel experiences which every state-department affords, diminish men's faith. For years past there has been thrust before them the fact that, of the funds of Greenwich Hospital, one-third goes to maintain the sailors, while two-thirds go in administration ; but this and other such facts do not stop their advocacy of more public administrations. The parable of straining at gnats and swallowing camels they see absolutely paralleled by officialism, in the red-tape particularity with which all minute details are enforced, and the astounding carelessness with which the accounts of a whole department, like the Patent Office, are left utterly uncontrolled ; and yet we continue to hear men propose government-audits as checks for mercantile companies ! No diminution of confidence seems to result from the disclos-

ure of stupidities which even a wild imagination would scarcely have thought possible ; instance the method of promotion lately made public, under which a clerk in one branch of a department takes the higher duties of some deceased superior clerk, without any rise of salary, while some clerk in another branch of the department gets the rise of salary without any increase in his responsibilities !

Endless are these evils and absurdities, and surviving generation after generation, as they do, spite of commissions and reports and debates, there is an annual crop of new schemes for government agencies that are expected by citizens to work just as they propose them to work. With a system of army promotion which insures an organized incompetence, but which survives perpetual protests ; with a notoriously ill-constituted admiralty, of which the doings are stock-subjects of ridicule ; with a church that maintains its most effete formulas, notwithstanding almost universal repudiation of them ; there are daily fresh demands for more law-established appliances. With building acts under which arise houses less stable than those of the last generation ; with coal-mine inspection that does not prevent coal-mine explosions ; with railway inspection that has for its accompaniment plenty of railway accidents —with these and other such failures continually displayed, there still prevails what M. Guizot rightly calls that “ gross delusion, a belief in the sovereign power of political machinery.”

A great service would be done by any man who would analyze the legislation, say of the last half century, and compare the expected results of Acts of Parliament with their proved results. He might make it an instructive revelation by simply taking all the preambles, and observing how many of the evils to be rectified were evils produced by preceding enactments. His chief difficulty would

be that of getting within any moderate compass the immense number of cases in which the benefits anticipated were not achieved, while unanticipated disasters were caused. And then he might effectively close his digest by showing what immense advantages have, in instance after instance, followed the entire cessation of legislative action; not, indeed, that such an accumulation of cases, however multitudinous and however conclusive, would have an appreciable effect on the average mind. Political fetichism will continue so long as men remain without scientific discipline—so long as they recognize only proximate causes, and never think of the remoter and more general causes by which their special agencies are set in motion. Until the thing which now usurps the name of education has been dethroned by a true education, having for its end to teach men the nature of the world they live in, new political delusions will grow up as fast as old ones are extinguished. But there is a select class existing, and a larger select class arising, on whom a work of the kind described would have an effect, and for whom it would be well worth while to write it.

VIII.

WHAT IS ELECTRICITY?

[FROM THE READER FOR NOVEMBER 19, 1864.]

WHAT IS ELECTRICITY?

PROBABLY few, if any, competent physicists have, of late years, used the term "electric fluid" in any other than a conventional sense. When distinguishing electricity into the two kinds, "positive" and "negative," or "vitreous" and "resinous," they have used the ideas suggested by these names merely as convenient symbols, and not as representatives of different entities. And, now that heat and light are proved to be modes of motion, it has become obvious that all the allied manifestations of force must be modes of motion.

What is the particular mode of motion which constitutes electricity, thus becomes the question. That it is some kind of molecular vibration, different from the molecular vibrations which luminous bodies give off, is, I presume, taken for granted by all who bring to the consideration of the matter a knowledge of recent discoveries. Beyond those simple oscillations of molecules, from which light and heat result, may we not suspect that there will, in some cases, arise compound oscillations? Let us consider whether the conditions under which electricity arises are not such as to generate compound oscillations; and whether the phenomena of electricity are not such as

must result from oscillations ; and whether the phenomena of electricity are not such as must result from compound oscillations.

The universal antecedent to the production of electricity is the immediate or mediate contact of heterogeneous substances—substances that are heterogeneous either in their molecular constitutions, or in their molecular states. If, then, electricity is some mode of molecular motion, and if, whenever it is produced, the contact of substances having unlike molecules, or molecules in unlike states, is the antecedent, there seems thrust upon us the conclusion that electricity results from some mutual action of molecules whose motions are unlike. What must this mutual action be ?

Before proceeding to answer this question, it will be needful to dispose of a demurrer that may be entered against the assumption, that unlike molecules have unlike motions in whatever states of aggregation they may be. It is currently admitted that, so long as they exist in the form of a gas, the particles of each kind of matter have a rate of vibration peculiar to themselves—a rate unlike the rates which the particles of other kinds of matter have. Prof. Tyndall has shown further that, when aggregated into a liquid, particles of any kind still maintain a rate of vibration synchronous with that which they had when diffused as a gas. But it is alleged that, on coalescing into solid masses, particles of different orders no longer maintain their distinctive rates of vibration. It is concluded that they severally take on vibrations of all orders, because solid matters, of whatever kinds, send off ethereal undulations of all lengths ; as is proved by the fact that each of them produces a continuous spectrum. I venture to think, however, that this inference is not a legitimate one. It seems to me demonstrably at variance with ultimate me-

chanical laws ; and I think the facts are explicable without assuming it. To take the first—the *a priori* argument—it is incongruous with the doctrine of the persistence of force. Any difference between the vibrations of two orders of molecules, A and B, existing in a gaseous state, implies some kind of difference between the characters of the molecules. Be this a difference of inertia, of bulk, or of form, matters not to the argument ; in any case, it is expressible as some unlikeness between the forces with which the molecules severally act and react on the medium that moves them. To say that, under the same conditions, the molecules A and B have different rates of vibration, though there exists between them no differential force, is to assert an effect without a cause, which is to deny the persistence of force. And if there exists between them some differential force, by virtue of which they react differently on incident forces, and acquire different rates of vibration, then this differential force must continue, under all states of aggregation, to produce its differential effect. To say that, when molecules of the kind A and molecules of the kind B are severally aggregated into solids, there ceases to be any distinction between their vibrations, is to say that the differential force ceases to produce any effect, and this is to deny the persistence of force. But now, passing to the *a posteriori* aspect of the question, it will be asked, How, then, can two solids, unlike in the natures of their molecules, severally produce, when heated, spectra that appear to be identical—spectra that severally imply ethereal undulations of all lengths ? The answer to this question is to be sought in the effects produced on the mutual actions of molecules by their state of aggregation. Were all the particles similarly conditioned—were they all restrained by each other in like ways and degrees, then no reason for differences in their times of vibration could be

assigned. But they are differently conditioned in two ways—one of them contingent, the other necessary. In the first place, the process of consolidation, however it has gone on, is almost sure to have induced unlike states of tension throughout the mass—here the crystallization being more complete ; there the cooling having gone on more rapidly. In the second place, the superficial particles, the layer of particles below it, and the subjacent particles to some depth, are subject to sets of restraining forces quite different from those which the inner particles are subject to ; since, while the inner particles are exposed to the actions of particles all around them, the outer particles are exposed to such actions only on one side. And, as the periods of oscillation must be in part determined by the amounts and distributions of the tensions, it follows that the rates of oscillation of particles on the surface must be unlike those of particles near the surface, and progressively more unlike those of particles successively farther away from the surface. Hence, besides impressing on the surrounding medium undulations corresponding with their own, the surface-molecules will conduct to the surrounding medium the somewhat different undulations passed on to them by the subjacent molecules ; and the still more different undulations passed on to them by molecules placed still deeper, and so on. Besides waves like their own, and waves a little unlike their own, and waves still more unlike their own, they will generate waves of various orders widely unlike their own. They will give off various vibrations shorter than their own, answering to the *differences* between the vibrations conveyed through them ; and various vibrations longer than their own, answering to the periodic *coincidences* of the vibrations conveyed through them. Thus it becomes comprehensible how molecules of two different orders, having strongly contrasted rates of

vibration, may, when severally aggregated with solid masses, both produce continuous spectra, and so appear to be in like states of agitation.

From this preliminary explanation, let us now return to the question propounded—What must be that mutual action of molecules having unlike motions, which, as we see, is the universal antecedent of electrical disturbance? The answer to this question does not seem difficult to reach, if we take the simplest case—the case of contact-electricity. When two pieces of metal of the same kind, and at the same temperature, are applied to one another, there is no electrical excitation; but, if the metals applied to one another be of different kinds, there is a genesis of electricity. This, which has been regarded as an anomalous fact—a fact so anomalous that it has been much disputed because apparently at variance with every hypothesis—is a fact to which an interpretation is at once supplied by the hypothesis that electricity results from the mutual disturbances of unlike molecular motions. For, if, on the one hand, we have homogeneous metals in contact, their respective molecules, oscillating synchronously, will give and take any forces which they impress on one another without producing an oscillation of a new order. But, if, on the other hand, the molecules of the one mass have periods of oscillation different from those of the other mass, then their mutual impacts will not agree with the period of oscillation of either, but will generate a new rhythm, differing from, and much slower than, that of either. The production of what are called “beats” in acoustics, will best illustrate this. It is a familiar fact that two strings, vibrating at different rates, from time to time concur in sending off ærial waves in the same direction at the same instant; that then, their vibrations getting more and more out of correspondence, they send off their ærial waves in

the same direction at exactly intermediate instants; and presently, coming once more into correspondence, they again generate coinciding waves. So that, when their periods of vibration differ but little, and when consequently it takes an appreciable time to complete their alternations of agreement and disagreement, there results an audible alternation in the sound—a succession of pulses of louder and feebler sound. In other words, besides the primary, simple, and rapid series of waves, constituting the two sounds themselves, there is a series of slow compound waves, resulting from their repeated conflicts and concurrences. Now, if, instead of the two strings communicating their vibrations to the air, each communicated its vibrations to the other, we should have just the same alternation of concurrent and conflicting pulses. And if each of the two strings was combined with an aggregate of others like itself, in such way that it communicated to its neighbors both its normal and its abnormal vibrations, it is clear that through each aggregate of strings there would be propagated one of these compound waves of oscillation, in addition to their simple rapid oscillations. This illustration will, I think, make it manifest that when a mass of molecules, which have a certain period of vibration, is placed in contact with a mass of molecules which have another period of vibration, there must result an alternation of coincidences and antagonisms in the molecular motions, such as will make the molecules alternately increase and decrease one another's motions. There will be instants at which they are moving in the same direction, and intervening instants at which they are moving in opposite directions; whence will arise periods of greatest and least deviations from their ordinary motions. And these greatest and least deviations, being communicated to neighboring molecules, and passed on by them to the next, will

result in waves of perturbation propagated throughout each mass.

Let us now ask what will be the mutual relations of these waves. Action and reaction being equal and opposite, it must happen that whatever effect a molecule of the mass A produces upon an adjacent molecule of the mass B, must be accompanied by an equivalent reverse effect upon itself. If a molecule of the mass A is at any instant moving in such way as to impress on a molecule of the mass B an additional momentum in any given direction, then the momentum of the molecule of B, in that direction, will be diminished to an equal amount. That is to say, to any wave of increased motion propagated through the molecules of B, there must be a reactive wave of decreased motion propagated in the opposite direction through the molecules of A. See, then, the two significant facts. Any *addition* of motion, which at one of these alternate periods is given by the molecules of A to the molecules of B, must be propagated through the molecules of B in a direction *away from* A; and simultaneously there must be a *subtraction* from the motion of the molecules of A, which will be propagated through them in a direction *away from* B. To every wave of *excess* sent through the one mass, there will be a corresponding wave of *defect* sent through the other; and these *positive* and *negative* waves will be exactly coincident in their times, and exactly equal in their amounts. Whence it obviously follows that, if these waves, proceeding from the surface of contact through the two masses in contrary directions, are brought into relation, they will neutralize each other. Action and reaction being equal and opposite, these *plus* and *minus* molecular motions will cancel one another if they are added together, and there will be a restoration of equilibrium.

These positive and negative waves of perturbation will

travel through the two masses of molecules with great facility. It is now an established truth that molecules absorb, in the increase of their own vibrations, those rhythmical impulses or waves which have periodic times the same as their own ; but that they cannot thus absorb successive impulses that have periodic times different from their own. Hence these differential undulations, being very long undulations in comparison with those of the molecules themselves, will readily pass through the masses of molecules, or be *conducted* by them. Further observe that, if the two masses of molecules continue joined, these positive and negative differential waves travelling away from the surface of contact in opposite directions, and severally arriving at the outer surfaces of the two masses, will be reflected from these ; and, travelling back again toward the surface of contact, will there meet and neutralize one another. Hence no current will be produced along a wire joining the outer surfaces of the masses ; since neutralization will be more readily effected by this return of the waves through the masses themselves. But, though no external current arises, the masses will continue in what we call opposite electric states ; as a delicate electrometer shows that they do. And further, if they are parted, the positive and negative waves which have the instant before been propagated through them respectively, remaining unneutralized, the masses will display their opposite electric states in a more conspicuous way. The residual positive and negative waves will then neutralize each other along any conductor that is placed between them, seeing that the *plus* waves communicated from the one mass to the conductor, meeting with the *minus* waves communicated from the other, and being mutually cancelled as they meet, the conductor will become a line of least resistance to the waves of each mass.

Let us pass now to the allied phenomena of thermo-electricity. Suppose these two masses of metal to be heated at their surfaces of contact; the forms of the masses being such that their surfaces of contact can be considerably heated without their remoter parts being much heated. What will happen? Prof. Tyndall has shown, in the cases of various gases and liquids, that, other things equal, when molecules have given to them more of the insensible motion which we call heat, there is no alteration in their periods of oscillation, but an increase in the dimensions of their oscillations; the molecules make wider excursions in the same times. As above implied, we have good reason to conclude that the like is true of solids; the apparent proof of changed periods of vibration being explicable in the manner shown. Assuming this, it will follow that, when the two metals are heated at their surfaces of contact, the result will be the same as before in respect of the natures and intervals of the differential waves. There will be a change, however, in the strengths of these waves. For, if the two orders of molecules have severally given to them increased quantities of motion, the perturbations which they impress on each other will also be increased. These somewhat stronger positive and negative waves of differential motion will, as before, travel through either mass away from the surfaces of contact—that is, toward the cold extremities of the masses. From these cold extremities they will, as before, rebound toward the surfaces of contact; and as before will tend thus to equilibrate each other. But they will meet with resistance in thus travelling back. It is a well-ascertained fact that raising the temperatures of metals decreases their conducting powers. Hence, if the two cold ends of the masses be put in connection by some other mass whose molecules can take on with facility these differential undulations—

that is, if the two ends be joined by a conductor, the positive and negative waves will meet and neutralize one another along this conductor, instead of being reflected back to the surfaces of contact. In other words, there will be established a current along the wire joining the two cold ends of the metallic masses.

Carried a step further, this reasoning affords us an explanation of the thermo-electric pile. If a number of these bars of different metals, as antimony and bismuth, are soldered together, end to end, in alternate order, AB, AB, AB, etc., then, so long as they remain cold, there is no manifestation of an electric current; or, if all the joints are equally heated, there is no manifestation of an electric current beyond that which would arise from any relative coolness of the two ends of the compound bar. But, if alternate joints are heated, an electric current is produced in a wire joining the two ends of the compound bar—a current that is intense in proportion to the number of pairs. What is the cause of this? Clearly, so long as all the joints are of the same temperature, the differential waves propagated from each joint toward the two adjacent joints will be equal and opposite to those from the adjacent joints, and no disturbance will be shown. But if alternate joints are heated, the positive and negative differential waves propagated away from them will be stronger than those propagated from the other joints. Hence, if the joint of bar A with bar B be heated, the other end of the bar B, which is joined to A2, not being heated, will receive a stronger differential wave than it sends back. In addition to the wave which its molecules would otherwise induce in the molecules of A2, there is an effect which it conducts from A1; and this extra impulse propagated to the other end of B2 is added to the impulse which its heated molecules would otherwise give to the molecules of A3; and

so on throughout the series. The waves being added together, become more violent, and the current through the wire joining the extremities of the series, more intense.

This interpretation of the facts of thermo-electricity will probably be met by the objection that there are, in some cases, thermo-electric currents developed between masses of metal of the same kind, and even between different parts of the same mass. It may be urged that, if unlikeness between the rates of vibration of molecules in contact is the cause of these electric disturbances; then, heat ought not to produce any electric disturbances when the molecules are of the same kind; since we have reason to conclude that heat does not change the periodic times of molecular vibrations. This objection, which seems at first sight a serious one, introduces us to a confirmation. For, where the masses of molecules are homogeneous in all other respects, difference of temperature does *not* generate any thermo-electric current. The junction of hot with cold mercury sets up no electric excitement. In all cases where thermo-electricity is generated between metals of the same kind, there is evidence of heterogeneity in their molecular structures—either one has been hammered and the other not, or one is annealed and the other unannealed. And, where the current is between different parts of the same mass, there are differences in the crystalline states of the parts, or differences between the ways in which the parts have cooled after being cast. That is to say, there is proof that the molecules in the two masses, or in different parts of the same mass, are in unlike relations to their neighbors—are in unlike states of tension. Now, however true it may be that molecules of the same kind vibrate at the same rate, whatever may be their temperature, it is obviously true so long only as their motions are not modified by restraining forces. If molecules of the same kind

are in one mass arranged into that state which produces crystallization, while in another mass they are not thus bound together ; or if in the one their molecular relations have been modified by hammering, and in the other not ; the differences in the restraints under which they respectively vibrate will effect their rates of vibration. And if their rates of vibration are rendered unequal, then the alleged cause of electrical disturbance comes into existence.

To sum up, may it not be said that by some such action alone can the phenomena of electricity be explained ; and that some such action must inevitably arise under the conditions ? On the one hand, electricity, being a mode of motion, implies the transformation of some preëxisting motion—implies also, a transformation such that there are two new kinds of motion simultaneously generated, equal and opposite in their directions—implies further that these differ in being *plus* and *minus*, and being therefore capable of neutralizing each other. On the other hand, in the above cases, molecular motion is the only source of motion that can be assigned ; and this molecular motion must, under the circumstances, produce effects of the kind witnessed. Molecules vibrating at different rates cannot be brought in proximity without affecting one another's motions. They must affect one another's motions by periodically adding to, or deducting from one another's motions ; and any excess of motion which those of the one order receive, must be accompanied by an equivalent defect of motion in those of the other order. When such molecules are units of aggregates placed in contact, they must pass on these perturbations to their neighbors. And so, from the surface of contact, there must be waves of excessive and defective molecular motion, equal in their amounts, and opposite in their directions—waves which must exactly compensate

one another when brought into relation. In brief, I think it will be admitted that the cause alleged is "a true cause," and that it is a cause calculated to work some such effects as those described.

I have here dealt only with electrical phenomena of the simplest kind. Hereafter I may possibly endeavour to show how this hypothesis furnishes interpretations of other forms of Electricity.

POSTSCRIPT.—During the nine years that have elapsed since the foregoing essay was published, I have never found myself any nearer to such allied interpretations of other forms of Electricity. Though, from time to time, I have recurred to the subject, in the hope of fulfilling the expectation raised by the closing sentence, yet no clue has encouraged me to pursue the speculation. Only now, when republication of the essay in a permanent form once more brings the question before me, does there occur a thought which appears worth setting down.

The union of two different ideas, not before placed in juxtaposition, has generated this thought. In the first number of the *Principles of Biology*, issued in January 1863, and dealing, among other "Data of Biology," with organic matter and the effects of forces upon it, I ventured to speculate about the molecular actions concerned in organic changes, and, among others, those by which light enables plants to assimilate the carbon from carbonic acid (§ 13.) Pointing out that the ability of heat to decompose compound molecules, is generally proportionate to the difference between the atomic weights of their component elements—assuming that components having widely-unlike atomic weights, have widely-unlike motions, and are therefore affected by widely-unlike undulations; the inference drawn was, that

in proportion as the rhythms of its components differ, a compound molecule will be unstable in presence of strong ethereal undulations acting upon one component more than on the other or others: their movements thus being rendered so incongruous that they can no longer hold together. It was argued, further, that a tolerably-stable compound molecule may, if exposed to strong ethereal undulations especially disturbing one of its components, be decomposed when in presence of some unlike molecule having components whose times of oscillation differ less from those of this disturbed component. And a parallel was drawn between the de-oxidation of metals by carbon when exposed to the longer undulations in a furnace, and the de-carbonization of carbonic acid by hydrogen, &c., when exposed to the shorter undulations in a plant's leaves. These ideas I recall chiefly for the purpose of presenting clearly the conception of a compound molecule as containing diversely-moving components—components having independent and unlike oscillations, in addition to the oscillation of the whole molecule formed by them. The legitimacy of this conception may, I suppose, be assumed. The beautiful experiments by which Prof. Tyndall has proved that light decomposes the vapours of certain compounds, illustrates this ability which the elements of a compound molecule have, severally to take up ethereal undulations corresponding to their own; and thus to have their individual movements so increased as to cause disruption of the compound molecule. This, at least, is the interpretation which Prof. Tyndall puts on the facts; and I presume that he puts a kindred interpretation upon the facts he has disclosed respecting the marvellous power possessed by complex-molecule vapours to absorb heat—the interpretation, namely, that the thermal undulations are, in such vapours, taken up in augmenting the move-

ments within each molecule, rather than in augmenting the movements of the molecules as wholes.

But now, assuming this to be a true conception of compound molecules and the effects produced on them by etherial undulations, there presents itself the question—What will be the effects produced by compound molecules on one another? How will the elements of one compound molecule have their rhythmical motions affected by proximity to the elements of an unlike compound molecule? May we not suspect that effects will be produced on one another, not only by the unlike molecules as wholes, but also certain other, and partially-independent, effects by their components on one another; and that there will so be generated some specialized form of molecular motion? Throughout the speculation set forth in the foregoing essay, the supposition is that the molecules are those of juxtaposed metals—molecules which, whether absolutely simple or not, are relatively simple; and these are regarded as producing on one another's movements perturbations of a relatively-simple kind, that admit of being transferred from molecule to molecule throughout each mass. In trying to carry further this interpretation, it had not occurred to me until now, to consider the perturbations produced on one another by compound molecules: taking into consideration, not merely the capacity each has for affecting the other as a whole, but the capacity which the constituents of each individually have for affecting the individual constituents of the other. If an individual constituent of a compound molecule can, by the successive impacts of etherial undulations, have the amplitudes of its oscillations so increased as to detach it; we can scarcely doubt that an individual constituent of a compound molecule may affect an individual constituent of an unlike

compound molecule near it: their respective oscillations perturbing one another apart from the perturbation produced on one another by the compound molecules as wholes. And it seems inferable that the secondary perturbation thus arising, will, like the primary perturbation, be such that the action and reaction, equal and opposite in their amounts, will produce equal and opposite deviations in the molecular movements. From this there appear to be several corollaries.

If a compound molecule, having a slow rhythm as a whole in addition to the more rapid rhythms of its members, has the power of taking up much of that motion we call heat in the increase of its internal movements, and to a corresponding degree takes up less in the increase of its movements as a whole; then may we not infer that the like will hold when other kinds of forces are brought to bear on it? May we not anticipate that when a mass of compound molecules of one kind is made to act upon a mass of compound molecules of another kind (say by friction), the molecular effects mutually produced, partly in agitating the molecules as wholes, and partly in agitating their components relatively to one another, will become less of the first and more of the last, in proportion as the molecules progress in compositeness?

A further implication suggests itself. While much of the force mutually exercised will thus go to increase the motion within each of the compound molecules that immediately act on one another, it appears inferable that relatively little of this intestinal motion will be communicated to other molecules. The excess of oscillation given to individual members of a large cluster, will not be readily passed on to homologous members of adjacent large clusters; since they must be relatively far apart. Whatever motion is transferred, must be transferred by

waves of the intervening etherial medium ; and the power of these must decrease rapidly as the distance increases. Obviously such difficulty of transfer must, for this reason, become great when the molecules become highly compounded.

At the same time will it not follow that such augmentations of movement caused in individual members of a cluster, not being readily transmissible to homologous members of adjacent clusters, will accumulate ; so that the more composite molecules become, the more possible will it be for individual components of them to be violently affected by individual components of different composite molecules near them—the more possible will it be for the mutual perturbations of such to accumulate ?

And now let us consider how these inferences bear on the interpretation of Statical Electricity—the form of Electricity most unlike the form above dealt with.

The substances which exhibit most conspicuously the phenomena of statical electricity are distinguished by the chemical complexity of their molecules, or else by the compositeness of their molecules produced allotropically or isomerically, or else by both. The simple substances electrically excited by friction, as carbon and sulphur, are those having several allotropic states—those capable of forming multiple molecules. The conchoidal fracture of the diamond and of roll-sulphur, suggest some colloidal form of aggregation, regarded by Prof. Graham as a form in which the molecules are united into relatively-large groups.* In such compound inorganic sub-

* Though conchoidal fracture may not be conclusive proof of colloidality, yet colloidal substances hard enough for fracture always display it. Respecting roll-sulphur I may say that though in a few days after it is made, it changes from its original crystalline state to a state in which it consists of minute crystals of another kind

stances as glass, we have, besides the chemical complexity, this same conchoidal fracture which, along with other evidence, shows glass to be a colloid; and the colloidal form of molecule is to be similarly inferred as characterizing resin, amber, &c. That dry animal substances, such as silk and hair, are formed of extremely-large molecules, we have clear proof; since these, chemically complex in a high degree, also have their components united in high multiples. It needs but to name the fact that non-electric and conducting substances, such as the metals, acids, water, &c., have relatively-simple molecules, to make it clear that the capacity for developing statical electricity depends in some way upon the presence of molecules of highly-composite kinds. And there is even still more conclusive proof than that yielded by the contrast between these groups—the proof furnished by the fact that the same substance may be a conductor or a non-conductor, according to its form of molecular aggregation. Thus selenium when crystalline is a conductor, but when in that allotropic state called amorphous, or non-crystalline, it is a good non-conductor. That is, accepting Prof. Graham's interpretation of these states, when its molecules are arranged singly, it is a conductor, but when compounded into groups it is a non-conductor, and, by implication, an electric.

So far, then, the *à priori* inference that a peculiar form of molecular perturbation will result when two unlike substances, one of which or each of which consists of highly-compounded molecules, are made to act on one

irregularly massed, yet there is reason for suspecting that these have a matrix of amorphous sulphur. I learn from Dr. Frankland that, when sublimed, sulphur aggregates partly into minute crystals and partly into an amorphous powder distinguished by insolubility.

another, is justified *à posteriori*. And now, instead of asking generally what will happen, let us ask what may be inferred to happen in a special case. A piece of glass is rubbed by silk. The large colloidal molecules forming the surface of each, are made to disturb one another. This is an inference about which there will, I suppose, be no dispute; since it is that assumed in the now-established doctrine of the correlation of heat and motion. Besides the effect which as wholes they mutually produce, there is the effect produced on one another by certain of their components. Such of these as have times of oscillation which differ, but not very widely, generate mutual perturbations that are equal and opposite. Could these perturbations be readily propagated away from the surface of contact through either mass, the effect would quickly dissipate, as in the case of metals; but, for the reason given above, these perturbations cannot be transferred with ease to the homologous members of the compound molecules behind. Hence the mechanical force of the friction, transformed into the molecular movements of these superficial constituent molecules, exists in them as *intense* mutual perturbations, which, unable to diffuse, are limited to the surfaces, and, indeed, to those parts of the surfaces that have acted on one another. In other words, the two surfaces become charged with two equal and opposite molecular perturbations—perturbations which, cancelling one another if the surfaces are kept in contact, cannot do this if the surfaces are parted; but can then cancel one another only if a conductor is interposed.

Let me briefly point out some apparent agreements between the corollaries from this hypothesis, and the observed phenomena.

We have, first, an interpretation of the fact, otherwise

seeming so anomalous, that this form of electrical excitement is *superficial*. That there should be a mode of activity limited to the surface of a substance, is difficult to understand in the absence of some conception of the kind suggested.

We have an explanation of the truth, insisted on by Faraday, that there can be no charge of one kind of electricity obtained, without a corresponding charge of the opposite kind. For it is a necessary implication of the hypothesis above set forth, that no molecular perturbation of the nature described, can be produced, without there being simultaneously produced a counter-perturbation exactly equal to it.

May we not also say that some insight is afforded into the phenomena of induction? In the cases thus far considered, the two surfaces electrified by the mutual perturbation of their molecules, are supposed to be in contact. Since, however, apparent contact is not actual contact, we must, even in this case, assume that the mutual perturbation is effected through an intervening stratum of ether. To interpret induction, then, we have first to conceive this stratum of ether to be greatly increased in thickness; and then to ask what will happen if the molecules of one surface, in this state of extreme internal perturbation, act on the molecules of a surface near it. Whether the stratum of ether is so thin as to be inappreciable to our senses, or whether it is wide enough to be conspicuous, it must still happen that if through it the mutual perturbations are conveyed in the one case, they will be conveyed in the other; and hence a surface which is already the seat of these molecular perturbations of one order, will induce perturbations of a counter order in the molecules of an adjacent surface.

In additional justification of the hypothesis, I will only

point out that voltaic electricity seems to admit of a kindred interpretation. For any molecular re-arrangement, such as occurs in a chemical decomposition and recombination, implies that the movements of the molecules concerned are mutually perturbed; and their perturbations must conform to the general law already described: the molecules must derange one another's motions in equal and opposite ways, and so must generate *plus* and *minus* derangements that cancel when brought into relation.

Of course I suggest this view simply as one occurring to an outsider. Unquestionably it presents difficulties; as, for instance, that no manifest explanation is yielded by it of electric attractions and repulsions. And there are doubtless objections not obvious to me that will at once strike those to whom the facts are more familiar. The hypothesis must be regarded as speculative; and as set down on the chance that it may be worth consideration.

Since the foregoing postscript was put in type, I have received criticisms upon it, oral and written, from several leading electricians and physicists; and I have profited by them to amend parts of the exposition. While I have remained without endorsements of the hypothesis, the objections raised have not been such as to make clear its untenability.

On one point an addition seems needful to exclude a misconception apt to arise. The description of the mutually-produced molecular perturbations, opposite in their kinds, as resulting in waves that are propagated away from the place of disturbance, and cancel when brought into relation, is met by the criticism, that waves, proceeding in opposite directions and meeting, do not

mutually cancel, but, passing one another, proceed onwards. There are, however, two respects in which the parallelism does not hold, between the waves referred to and the waves I have described, which perhaps cannot rightly be called waves. The waves referred to, as those on the surface of a liquid, are such that each consists of two opposite deviations from a mean state. Each shows excess and defect. A series of them is a series of *plus* and *minus* divergences; and if two such series meet one another, they do not cancel. But there is no analogy between this case and a case in which the whole effect propagated in one direction is a *plus* motion, and the whole effect propagated in the opposite direction is a *minus* motion—that is, *plus* and *minus* changes in other motions. These, if equal in amount, will cancel when they meet. If one is a continual addition to motion in a certain direction, and the other a corresponding subtraction from motion in that direction, the two, when added together, must produce zero. From another point of view the absence of parallelism between the two cases may be equally well seen. Waves of the kinds instanced as not cancelling one another, are waves produced by some force foreign to the medium exhibiting them—an extrinsic force. Hence, proceeding from the place of initiation, they are necessarily, considered in their totalities, *positive* in whatever directions they travel; and hence, too, when conducted round so as to meet, an exaggerated perturbation will result. But in the simplest of the cases here dealt with (that of contact-electricity) the perturbation is not of extrinsic origin, but of intrinsic origin. There is no external activity at the expense of which the quantity of motion in the disturbed matter is positively increased. The activity, being such only as is internally possessed, can generate no more motion than already

exists; and therefore whatever gain of motion arises anywhere in the molecules must be at the cost of an equal loss elsewhere. Here perturbation cannot be a *plus* motion in all directions from the place of initiation; but any *plus* motion continually generated can result only from an equal and opposite *minus* motion continually generated; and the mutual cancelling becomes a corollary from the mutual genesis.

In the course of the discussions which I have had, the following way of presenting the argument has occurred to me.

1. Two homogeneous bodies are rubbed together and there results heat; the interpretation being that the molar motion is transformed into molecular motion. Here motion produces motion—the *form* only being changed.

2. Now of the two bodies one is replaced by a body unlike in nature to the other, and they are again rubbed. Again a certain amount of heat is produced: some of the molar motion is, as before, transformed into molecular motion. But, at the same time, another part of the molar motion is changed into—what? Surely not a fluid, a substance, a thing. It cannot be that what in the first case produces a change of *state*, in the second case produces an *entity*. And in the second case itself, it cannot be that while part of the original motion becomes changed into another species of motion, part of it becomes changed into a species of matter.

3. Must we not say, then, that if, when the two bodies rubbed are homogeneous, sensible motion is transformed into insensible motion, when they are heterogeneous, sensible motion must still be transformed into insensible motion: such difference of nature as this insensible motion has, being consequent on the difference of nature

between the two kinds of molecules acting on one another?

4. If, when the two masses are homogeneous, those molecules which compose the two rubbed surfaces disturb one another, and increase one another's oscillations; then, when the two masses are heterogeneous, those molecules forming the two rubbed surfaces must also disturb one another in some way—increase one another's agitations.

5. If, when the two sets of molecules are alike in kind, the mutual disturbance is such that they simply increase the amplitudes of one another's oscillations, and do this because their times correspond; then, must it not be that when they are unlike in kind, the mutual disturbance will involve a differential action consequent on the unlikeness of their motions? Must not the discord of the oscillations produce a result which cannot be produced when the oscillations are concordant—a compound form of molecular motion?

6. If masses of relatively-simple molecules, placed in apposition and made to act on one another, cause such effects; then must we not say that effects of the same class, but of a different order, will be caused by the mutual actions, not of the molecules as wholes, but of their constituents? If the rubbed surfaces severally consist of highly-compounded molecules—each containing, it may be, several hundreds of minor molecules, united into a definitely-arranged cluster; then, while the molecules as wholes affect one another's motions, must we not infer that the constituents of the one class will affect the constituents of the other class in their motions? While molecules as wholes increase one another's oscillations, or decrease one another's oscillations, or both, the components of them cannot be so stably arranged that members of

the one group are wholly inoperative on members of the other group. And if they are operative, then there must be a compound form of molecular motion which arises when masses of highly-compounded molecules of unlike kinds, are made to act on one another.

With this series of propositions and questions, I leave the suggestion to its fate ; merely remarking that, setting out with the principles of molecular physics now accepted, it seems difficult to avoid the implication that some actions of the kinds described take place, and that there result from them some classes of phenomena—phenomena which, if not those we call electrical, remain to be identified.

IX.

THE CONSTITUTION OF THE SUN.

[FROM THE READER FOR FEBRUARY 25, 1865.]

THE CONSTITUTION OF THE SUN.

THE hypothesis of M. Faye, which you have described in your numbers for January 28 and February 4, is to a considerable extent coincident with one which I ventured to suggest in an article on "Recent Astronomy and the Nebular Hypothesis," published in the "Westminster Review" for July, 1858. In considering the possible causes of the immense differences of specific gravity among the planets, I was led to question the validity of the tacit assumption that each planet consists of solid or liquid matter from centre to surface. It seemed to me that any other internal structure, which was mechanically stable, might be assumed with equal legitimacy. And the hypothesis of a solid or liquid shell, having its cavity filled with gaseous matter at high pressure and temperature, was one which seemed worth considering, since it promised an explanation of the anomalies named, as well as sundry others.

Hence arose the inquiry—What structure will result from the process of nebular condensation? "Starting with a rotating spheroid of aëriform matter, in the latter stages of its concentration, but before it has begun to take a liquid or solid form," it was argued that the actions going

on in it will be these—increasing aggregation, and consequent evolution of heat, which must be greater at the centre than at the surface, resulting want of equilibrium, and the setting up of a circulation of gases from the hottest part to the coolest part, along lines of least resistance to expansion : and hence an establishment of constant currents from the centre along the axis of rotation toward each pole followed by a flowing over of the accumulation at each pole in currents along the surface to the equator ; such currents being balanced by the continual collapse, toward the centre, of gaseous matter lying in the equatorial plane. It was further argued that gases travelling from the centre by way of the poles to the equator, must be cooled first by expansion on approaching the surface, and afterward by freedom of radiation into space ; and it was hence inferred that the outside of the spheroid at the equator will be the place of greatest refrigeration. It was concluded that the earliest precipitation will therefore occur in that region.

“ An equatorial belt of vapor will be the first formed, and, widening into a zone, will by-and-by condense into a fluid (liquid). Gradually this fluid (liquid) film will extend itself on each side the equator, and, encroaching upon the two hemispheres, will eventually close over at the poles : thus forming a thin, hollow globe, or rather spheroid, filled with gaseous matter. We do not mean that this condensation will take place at the very outermost surface ; for probably round the denser gases forming the principal mass there will extend strata of gases too rare to be entangled in these processes. It is the surface of this inner spheroid of denser gases to which our reasoning points as the place of earliest condensation.”

“ The internal circulation we have described continuing, as it must, after the formation of this liquid film, there

will still go on the radiation of heat, and the progressive aggregation. The film will thicken at the expense of the internal gaseous substances precipitated upon it. As it thickens, as the globe contracts, and as the gravitative force augments, the pressure will increase, and the evolution and radiation of heat will go on more rapidly. Eventually, however, when the liquid shall become very thick, and the internal cavity relatively small, the obstacle put to the escape of heat by this thick liquid, with its slowly-circulating currents, will turn the scale; the temperature of the outer surface will begin to diminish, and a solid crust will form while the internal cavity is yet unobliterated" (pp. 215, 216).

Omitting the various confirmations which this *a priori* conclusion was shown to derive from the contrasted specific gravities of the planets, as well as from sundry other peculiarities they present, I will pass to the deductions respecting the constitution of the sun which were drawn from this hypothesis. The process of condensation being in its essentials the same for all concentrating nebular spheroids, planetary or solar, it was argued that the sun is still passing through that incandescent stage which all the planets have long ago passed through: his later aggregation, joined with the immensely greater ratio of his mass to his surface, involving the comparative lateness of cooling. Supposing the sun to have reached the state of a molten shell, enclosing a gaseous nucleus, it was concluded that this molten shell, ever radiating its heat, but ever acquiring fresh heat by further integration of the sun's mass, will be constantly kept up to that temperature at which its substance evaporates.

"If we consider what must have been the state of things here when the surface of the earth was molten, we shall see that, round the still molten surface of the sun,

there probably exists a stratum of dense æriform matter, made up of sublimed metals and metallic compounds, and above this a stratum of comparative rare medium analogous to air. What now will happen with these two strata? Did they both consist of permanent gases, they could not remain separate: according to a well-known law, they would eventually form a homogeneous mixture. But this will by no means happen when the lower stratum consists of matters that are gaseous only at excessively high temperatures. Given off from a molten surface, ascending, expanding, and cooling, these will presently reach a limit of elevation above which they cannot exist as vapor, but must condense and precipitate. Meanwhile, the upper stratum, habitually charged with its quantum of these denser matters, as our air with its quantum of water, and ready to deposit them on any depression of temperature, must be habitually unable to take up any more of the lower stratum; and therefore this lower stratum will remain quite distinct from it. We conclude, then, that there will be two concentric atmospheres, having a definite limit or separation" (pp. 222, 223).

To a revised edition of this essay, republished along with others in November, 1863, I made the following additions:

"Since the foregoing paragraph was originally published, in 1858, the proposition it announces as a corollary from the nebular hypothesis has been in great part verified. The marvellous disclosures made by spectrum analysis have proved beyond the possibility of doubt that the solar atmosphere contains, in a gaseous state, the metals iron, calcium, magnesium, sodium, chromium, and nickel, along with small quantities of barium, copper, and zinc. . . . And here let us not omit to note also the significant bearing which Kirchhoff's results have on the doctrine

contended for in a foregoing section. Leaving out the barium, copper, and zinc, of which the quantities are inferred to be small, the metals existing as vapors in the sun's atmosphere, and by consequence as molten in his incandescent body, have an average specific gravity of 4.25. But the average specific gravity of the sun is about 1. How is this discrepancy to be explained? To say that the sun consists almost wholly of the three lighter metals named, would be quite unwarranted by the evidence: the results of spectrum analysis would just as much warrant the assertion that the sun consists almost wholly of the three heavier. Three metals (two of them heavy) having been already left out of the estimate because their quantities appear to be small, the only legitimate assumption on which to base an estimate of specific gravity, is that the rest are present in something like equal amounts. Is it, then, that the lighter metals exist in larger proportions in the molten mass, though not in the atmosphere? This is very unlikely; the known habitudes of matter rather imply that the reverse is the case. Is it, then, that, under the conditions of temperature and gravitation existing in the sun, the state of liquid aggregation is wholly unlike that existing here? This is a very strong assumption; it is one for which our terrestrial experience affords no adequate warrant; and, if such unlikeness exists, it is very improbable that it should produce so immense a contrast in specific gravity as that of 4 to 1. The more legitimate conclusion is that the sun's body is not made up of molten matter all through, but that it consists of a molten shell with a gaseous nucleus. And this we have seen to be a corollary from the nebular hypothesis." The conception of the sun's constitution thus set forth is like that of M. Faye in so far as the successive changes, the resulting structures, and the ultimate state are concerned; but unlike it

in so far as the sun is supposed to have reached a later stage of concentration. As I gather from your abstract of M. Faye's paper, he considers the sun to be at present a gaseous spheroid, having an envelope of metallic matters precipitated in the shape of luminous clouds, the local dispersions of which, caused by currents from within, appear to us as spots; and he looks forward to the future formation of a liquid film as an event that will rapidly be followed by extinction. Whereas the above hypothesis is that the liquid film already exists beneath the visible photosphere, and that extinction cannot result until, in the course of further aggregation, the gaseous nucleus has become so much reduced, and the shell so much thickened, that the escape of the heat generated is greatly retarded. I think this view escapes some objections to which that of M. Faye is open, and that it harmonizes with the appearances as well, if not better. Let us contrast the two.

Though the specific gravity of the sun is so low as almost to negative the supposition that its body consists of solid or liquid matter from center to surface, yet it seems higher than is probable for a gaseous spheroid with a cloudy envelope. Possibly, notwithstanding intense temperature, the gravitation of the sun's substance toward its centre might be great enough to produce considerable density in its interior; but that the interior density of a gaseous medium might be thus made great enough to give the entire mass a specific gravity equal to that of water, is a strong assumption. Near its surface the heated gases can scarcely be supposed to have so high a specific gravity, and, if not, the interior must be supposed to have a much higher specific gravity. Again, M. Faye's hypothesis appears to be espoused by him, partly because it affords an explanation of the spots, which are considered as openings in the photosphere, exposing the comparatively non-luminous gases

filling the interior. But if these interior gases are non-luminous from the absence of precipitated matter, must they not for the same reason be transparent? And if transparent, will not the light from the remote side of the photosphere seen through them be nearly as bright as that of the side next to us? By as much as the intensely-heated gases of the interior are disabled by the dissociation of their molecules from giving off luminiferous undulations, by so much must they be disabled from absorbing the light transmitted through them. And if their great light-transmitting power is exactly complementary to their small light-emitting power, there seems no reason why the interior of the sun, disclosed to us by openings in the photosphere, should not appear as bright as its exterior.

Take now the supposition that a more advanced state of concentration has been reached. A shell of molten metallic matter enclosing a gaseous nucleus still higher in temperature than itself, and ever giving off, in the shape of heat, that motion which the molecules of the whole mass lose as they approach the common centre of gravity, will be continually raised to the highest temperature consistent with its state of liquid aggregation. Unless we assume that simple radiation suffices to give off all the heat generated by progressive integration, we must conclude that the mass will be raised to that temperature at which part of its heat is absorbed in vaporizing its superficial parts. The atmosphere of metallic gases hence resulting cannot continue to accumulate without eventually reaching a height above the sun's surface, at which the cooling caused by radiation and rarefaction will cause condensation into a cloud—cannot, indeed, cease accumulating until the precipitation from the upper limit of the atmosphere balances the evaporation from its lower limit. This upper limit of the atmosphere of metallic gases, whence precipitation is

perpetually taking place, will form the visible photosphere—partly giving off light of its own, partly letting through the more brilliant light of the incandescent mass below. This conclusion harmonizes with the appearances. Sir John Herschel, advocating though he does an antagonist hypothesis, gives a description of the sun's surface which agrees very completely with the processes here supposed. He says :

“There is nothing which represents so faithfully this appearance as the slow subsidence of some flocculent chemical precipitation into a transparent fluid, when viewed perpendicularly from above ; so faithfully indeed, that it is hardly possible not to be impressed with the idea of a luminous medium intermixed, but not confounded, with a transparent and non-luminous atmosphere, either floating as clouds in our air, or pervading it in vast sheets and columns like flame or the streamers of our northern lights, directed in lines perpendicular to the surface.”

If the constitution of the sun be that which is above inferred, it does not seem difficult to conceive still more specifically the production of these appearances. Everywhere, throughout the atmosphere of metallic vapors which clothes the solar surface, there must be ascending and descending currents. The magnitude of these currents will obviously depend on the depth of this atmosphere ; if it is shallow, the currents will be small ; but if many thousands of miles deep, the currents may be wide enough to render visible to us the place at which they impinge on the limit of the atmosphere, and the places whence the descending currents commence. The top of an ascending current will be a space over which the thickness of condensed cloud is the least, and through which the greatest amount of light from beneath penetrates. The clouds perpetually formed at the top of such a current will be perpetually thrust

aside by the uncondensed gases from below them ; and, growing while they are thrust aside, will collect in the spaces between the ascending currents, where there will result the greatest degree of opacity. Hence the mottled appearance—hence the “ pores ” or dark interspaces separating the light-giving spots.

Of the more special appearances which the photosphere presents, let us take first the faculæ. These are ascribed to waves in the photosphere ; and the way in which such waves might produce an excess of light has been variously explained in conformity with various hypotheses. What would result from them in a photosphere constituted and conditioned as above supposed ? Traversing a canopy of cloud, here thicker and there thinner, a wave would cause a disturbance very unlikely to leave the thin and thick parts without any change in their average permeability to light. There would probably be, at some parts of the wave, extensions in the areas of the light-transmitting clouds resulting in the passage of more rays from below. Another phenomenon, less common but more striking, appears also to be in harmony with the hypothesis. I refer to those spots, of a brilliancy much greater than that of the photosphere, which are sometimes observed. In the course of a physical process so vast and so active as that here supposed to be going on in the sun, we may expect that concurrent causes will occasionally produce ascending currents much hotter than usual, or more voluminous, or both. One of these, on reaching the stratum of luminous and illuminated cloud forming the photosphere, will burst through it, dispersing and dissolving it, and ascending to a greater height before it begins itself to condense ; meanwhile allowing to be seen, through its transparent mass, the incandescent molten shell of the sun's body.

But what of the spots commonly so called ? it will be

asked. In the essay from which the above passages are quoted, it was suggested that refraction of the light, passing through the depressed centres of cyclones in this atmosphere of metallic gases, might possibly be the cause; but this, though defensible as a "true cause," appeared on further consideration to be an inadequate cause. Keeping the question in mind, however, and still taking as a postulate the conclusion of Sir John Herschel, that the spots are in some way produced by cyclones, I was led, in the course of the year following the publication of the essay, to an hypothesis which seemed more satisfactory. This, which I named at the time to Prof. Tyndall, had a point in common with the one afterward published by Prof. Kirchhoff, in so far as it supposed cloud to be the cause of darkness; but differed in so far as the cause of the cloud was assigned. More pressing matters prevented me from developing the idea for some time; and, afterward, I was deterred from including it in the revised edition of the essay, by its inconsistency with the "willow-leaf" doctrine, at that time dominant. The reasoning was as follows: The central region of a cyclone must be a region of rarefaction, and consequently a region of refrigeration. In an atmosphere of metallic gases rising from a molten surface, and presently reaching a limit at which condensation takes place, the molecular state, especially toward its upper part, must be such that a moderate diminution of density, and fall of temperature, will cause precipitation. That is to say, the rarefied interior of a solar cyclone will be filled with cloud; condensation, instead of taking place only at the level of the photosphere, will here extend to a great depth below it, and over a wide area. What will be the characters of a cloud, thus occupying the interior of a cyclone? It will have a rotatory motion; and this it has been seen to have. Being funnel-shaped, as analogy war-

rants us in assuming its central parts will be much deeper than its peripheral parts, and therefore more opaque. This, too, corresponds with observation. Mr. Dawes has discovered that in the middle of the spot there is a blacker spot; just where there would exist a funnel-shaped prolongation of the cyclonic cloud down toward the sun's body, the darkness is greater than elsewhere. Moreover, there is furnished no adequate reason for the depression which one of these dark spaces exhibits. In a whirlwind, as in a whirlpool, the vortex will be below the general level, and all around the surface of the medium will descend toward it. Hence, a spot seen obliquely, as when carried toward the sun's limb, will have its umbra more and more hidden, while its penumbra still remains visible. Nor are we without some interpretation of the penumbra. If, as is implied by what has been said, the so-called "willow-leaves," or "rice-grains," are the tops of the currents ascending from the sun's body, what changes of appearance are they likely to undergo in the neighborhood of a cyclone? For some distance round a cyclone there will be a drawing in of the superficial gases toward the vortex. All the luminous spaces of more transparent cloud forming the adjacent photosphere will be changed in shape by these centripetal currents; they will be greatly elongated; and there will so be produced that "thatch"-like aspect which the penumbra presents.

Of course these views are to be regarded simply as speculative, in common with all others at present current respecting the sun's structure. But, in the absence of any hypothesis supported by something like scientific proof, it has seemed to me well to suggest this one as being warranted by established physical principles, and having a general congruity with the appearances.

X.

MR. MARTINEAU ON EVOLUTION.

MR. MARTINEAU ON EVOLUTION.

THE article by Mr. Martineau, in the April number of the *Contemporary Review*, on "The Place of Mind in Nature, and Intuition of Man," recalled to me a partially-formed intention to deal with the chief criticisms that have from time to time been made on the general doctrine set forth in "First Principles;" since, though not avowedly directed against propositions asserted or implied in that work, Mr. Martineau's reasoning tells against them by implication. The fulfilment of this intention I should, however, have continued to postpone, had I not learned that the arguments of Mr. Martineau are supposed by many to be conclusive, and that, in the absence of replies, it will be assumed that no replies can be made. It seems desirable, therefore, to notice these arguments at once--especially as the essential ones may, I think, be effectually dealt with in a comparatively small space.

The first definite objection which Mr. Martineau raises is, that the hypothesis of General Evolution is powerless to account even for the simpler orders of facts in the absence of numerous different substances. He argues that, were matter all of one kind, no such phenomena as chemical changes would be possible; and that, "in order to start the world on its chemical career, you must enlarge its

capital, and present it with an outfit of *heterogeneous* constituents. Try, therefore, the effect of such a gift; fling into the preëxisting caldron the whole list of recognized elementary substances, and give leave to their affinities to work." The intended implication obviously is, that there must exist the separately-created elements before evolution can begin.

Here, however, Mr. Martineau makes an assumption which few, if any, chemists will commit themselves to, and which many will distinctly deny. There are no "recognized elementary substances," if the expression means substances known to be elementary. What chemists, for convenience, call elementary substances, are merely substances which they have thus far failed to decompose; but, bearing in mind past experiences, they do not dare to say that they are absolutely undecomposable. Water was taken to be an element for more than two thousand years, and then was proved to be a compound; and, until Davy brought a galvanic current to bear upon them, the alkalis and the earths were supposed to be elements. So little true is it that "recognized elementary substances" are supposed to be absolutely elementary, that there has been much speculation among chemists respecting the process of compounding and recombining by which they have been formed out of some ultimate substance—some chemists having supposed the atom hydrogen to be the unit of composition, but others having contended that the atomic weights of the so-called elements are not thus interpretable. If I remember rightly, Sir John Herschel was one, among others, who, some five-and-twenty years ago, threw out suggestions respecting a system of compounding that might explain these relations of the atomic weights.

What was at that time a suspicion has now become practically a certainty. Spectrum analysis yields results

wholly irreconcilable with the assumption that the conventionally-named simple substances are really simple. Each yields a spectrum having lines varying in number from two to eighty or more, every one of which implies the intercepting of ethereal undulations of a certain order by something oscillating in unison or in harmony with them. Were iron absolutely elementary, it is not conceivable that its atom could intercept ethereal undulations of eighty different orders: though it does not follow that its molecule contains as many separate atoms as there are lines in its spectrum, it must clearly be a complex molecule. Still more clearly is this general implication confirmed by facts furnished by nitrogen; the spectrum of which has two quite different sets of lines, and changes from one set to the other as the temperature is varied. The evidence thus gained points to the conclusion that, out of some primordial units, the so-called elements arise by compounding and recompounding; just as by the compounding and recompounding of so-called elements there arise oxides, and acids, and salts.

And this hypothesis is entirely in harmony with the phenomena of allotropy. Various substances, conventionally distinguished as simple, have several forms under which they present quite different properties. The semi-transparent, colorless, extremely active substance commonly called phosphorus may be so changed as to become opaque, dark red, and inert. Like changes are known to occur in some gaseous, non-metallic elements, as oxygen; and also in metallic elements, as antimony. These total changes of properties, brought about without any changes to be called chemical, are interpretable only as due to molecular rearrangements; and, by showing that difference of property is producible by difference of arrangement, they support the inference otherwise to be drawn,

that the properties of different elements result from differences of arrangement arising by the compounding and re-compounding of ultimate homogeneous units.

Thus Mr. Martineau's objection, which at best would imply a turning of our ignorance of the nature of elements into positive knowledge that they are simple, is, in fact, to be met by two sets of evidences, which distinctly imply that they are compound.

Mr. Martineau next alleges that a fatal difficulty is put in the way of the General Doctrine of Evolution by the existence of a chasm between the living and the not-living. He says: "But with all your enlargement of data, turn them as you will, at the end of every passage which they explore, the *door of life* is closed against them still." Here again our ignorance is employed to play the part of knowledge: the fact that we do not know distinctly how an alleged transition has taken place is transformed into the fact that no transition has taken place. We have, in a more general shape, the argument which until lately was thought conclusive—the argument that because the genesis of each species of creature had not been explained, therefore each species must have been separately created.

Merely noting this, however, I go on to remark that scientific discovery is day by day narrowing the chasm, or, to vary Mr. Martineau's metaphor, "opening the door." Not many years since, it was held as certain that the chemical compounds distinguished as organic could not be formed artificially. Now, more than a thousand organic compounds have been formed artificially. Chemists have discovered the art of building them up, from the simpler to the more complex, and do not doubt that they will eventually produce the most complex. Moreover, the phenomena attending isomeric change give a clew to those

movements which are the only indications we have of life in its lowest forms. In various colloidal substances, including the albuminoid, isomeric change is accompanied by contraction or expansion, and consequent motion; and, in such primordial types as the *Protogenes* of Haeckel, which do not differ in appearance from minute portions of albumen, the observed motions are comprehensible as accompanying isomeric changes caused by variations in surrounding physical actions. The probability of this interpretation will be seen on remembering the evidence we have that, in the higher organisms, many functions are essentially effected by isomeric changes from one to another of the multitudinous forms which protein assumes.

Thus the reply to this objection is, first, that there is going on from both sides a rapid narrowing of the chasm supposed to be impassable; and, second, that, even were the chasm not in course of being filled up, we should no more be justified in therefore assuming a supernatural commencement of life than Kepler was justified in assuming that there were guiding-spirits to keep the planets in their orbits, because he could not see how else they were to be kept in their orbits.

The third definite objection made by Mr. Martineau is of kindred nature. The Hypothesis of Evolution is, he thinks, met by the insurmountable difficulty that plant-life and animal life are absolutely distinct. "You cannot," he says, "take a single step toward the deduction of sensation and thought: neither at the upper limit do the highest plants (the exogens) transcend themselves and overbalance into animal existence; nor at the lower, grope as you may among the sea-weeds and sponges, can you persuade the sporules of the one to develop into the other."

This is an extremely unfortunate objection to raise.

For, though there are no transitions from vegetal to animal life at the places Mr. Martineau names, where, indeed, no biologist would look for them, yet the connection between the two great kingdoms of living things is so complete that separation is now regarded as impossible. For a long time naturalists endeavored to frame definitions such as would, the one include all plants and exclude all animals, and the other include all animals and exclude all plants. But they have been so repeatedly foiled in the attempt that they have given it up. There is no chemical distinction that holds; there is no structural distinction that holds; there is no functional distinction that holds; there is no distinction as to mode of existence that holds. Large groups of the simpler animals contain chlorophyll, and decompose carbonic acid under the influence of light as plants do. Large groups of the simpler plants, as you may observe in the diatoms from any stagnant pool, are no less actively locomotive than the minute creatures classed as animals seen along with them; nay, among these lowest types of living things it is common for the life to be now predominantly animal and presently to become predominantly vegetal. The very name *zoospores*, given to germs of *algæ*, which for a while swim about actively by means of cilia, and presently settling down grow into plant-forms, is given because of this conspicuous community of nature. So complete is this community of nature that for some time past many naturalists have wished to establish for these lowest types a sub-kingdom intermediate between the animal and the vegetal: the reason against this course being, however, that the difficulty crops up afresh at any assumed places where this intermediate sub-kingdom may be supposed to join the other two.

Thus the assumption on which Mr. Martineau proceeds

is diametrically opposed to the conviction of naturalists in general.

Though I do not perceive that it is specifically stated, there appears to be tacitly implied a fourth difficulty of allied kind—the difficulty that there is no possibility of transition from life of the simplest kind to mind. Mr. Martineau says, indeed, that there can be “with only vital resources, as in the vegetable world, no beginning of mind:” apparently leaving it to be inferred that in the animal world the resources are such as to make the “beginning of mind” comprehensible. If, however, instead of leaving it a latent inference, he had distinctly asserted a chasm between mind and bodily life, for which there is certainly quite as much reason as for asserting a chasm between animal life and vegetal life, the difficulties in his way would have been no less insuperable.

For those lowest forms of irritability in the animal kingdom, which, I suppose, Mr. Martineau refers to as the “beginning of mind,” are not distinguishable from the irritability which plants display: they in no greater degree imply consciousness. If the sudden folding of a sensitive-plant’s leaf when touched, or the spreading out of the stamens in a wild-cistus when gently brushed, is to be considered a vital action of a purely physical kind, then so too must be considered the equally slow contraction of a polype’s tentacles. And yet, from this simple motion of an animal having no nervous system, we may pass by insensible stages through ever-complicating forms of actions, with their accompanying signs of feeling and intelligence, until we reach the highest.

Even apart from the evidence derived from the ascending grades of animals up from *zoophytes*, as they are significantly named, it needs only to observe the evolution

of a single animal to see that there does not exist any break or chasm between the life which shows no mind and the life which shows mind. The yolk of an egg which the cook has just broken not only yields no sign of mind, but yields no sign of life. It does not respond to a stimulus as much even as many plants do. Had the egg, instead of being broken by the cook, been left under the hen for a certain time, the yolk would have passed by infinitesimal gradations through a series of forms ending in the chick, and by similarly infinitesimal gradations would have arisen those functions which end in the chick breaking its shell ; and which, when it gets out, show themselves in running about, distinguishing and picking up food, and squeaking if hurt. When did the feeling begin, and how did there come into existence that power of perception which the chick's actions show ? Should it be objected that the chick's actions are mainly automatic, I will not dwell on the fact that, though they are largely so, the chick manifestly has feeling and therefore consciousness, but I will accept the objection, and propose that instead we take the human being. The course of development before birth is just of the same general kind ; and similarly, at a certain stage, begins to be accompanied by reflex movements. At birth there is displayed an amount of mind certainly not greater than that of the chick—there is no power of running from danger, no power of distinguishing and picking up food. If we say the chick is unintelligent, we must certainly say the infant is unintelligent. And yet from the unintelligence of the infant to the intelligence of the adult, there is an advance by steps so small that on no day is the amount of mind shown appreciably different from that shown on preceding and succeeding days.

Thus the tacit assumption, that there exists a break, is

not simply gratuitous, but is negatived by the most obvious facts.

Certain of the words and phrases, used in explaining that particular part of the Doctrine of Evolution which deals with the origin of species, are commented upon by Mr. Martineau as having implications justifying his view. Let us consider his comments.

He says that *competition* is not an "original power, which can of itself do any thing;" further, that "it cannot act except in the presence of some *possibility of a better or worse*;" and that this "possibility of a better or worse" implies a "world prearranged for progress," "a directing Will intent upon the good." Had Mr. Martineau looked more closely into the matter, he would have found that, though the words and phrases he quotes are used for convenience, the conceptions they imply are not at all essential to the doctrine. Under its rigorously-scientific form, the doctrine is expressible in purely-physical terms, which neither imply competition nor imply better and worse.*

Beyond this indirect mistake there is a direct mistake. Mr. Martineau speaks of the "survivorship of the better," as though that were the statement of the law, and then adds that the alleged result cannot be inferred "except on the assumption that whatever is *better* is *stronger* too." But the words he here uses are his own words, not the words of those he opposes. The law is the survival of the *fittest*. Probably, in substituting "better" for "fittest," Mr. Martineau did not suppose that he was changing the meaning; though I dare say he perceived that the meaning of the word "fittest" did not suit his argument so well. Had he examined the facts, he would have found

* "Principles of Biology," §§ 159-163.

that the law is not the survival of the "better" or the "stronger," if we give to those words any thing like their ordinary meanings. It is the survival of those which are constitutionally fittest to thrive under the conditions in which they are placed; and very often that which, humanly speaking, is inferiority, causes the survival. Superiority, whether in size, strength, activity, or sagacity, is, other things equal, at the cost of diminished fertility; and where the life led by a species does not demand these higher attributes, the species profits by decrease of them, and accompanying increase of fertility. This is the reason why there occur so many cases of retrograde metamorphosis—this is the reason why parasites, internal and external, are so commonly degraded forms of higher types. Survival of the "better" does not cover these cases, though survival of the "fittest" does. When it is remembered that these cases outnumber all others—that there are more species of parasites than there are species of all other animals put together—it will be seen that the expression "survivorship of the better" is wholly inappropriate, and the argument Mr. Martineau bases upon it quite untenable. Indeed, if, in place of those adjustments of the human sense-organs, which he so eloquently describes as implying prearrangement, Mr. Martineau had described the countless elaborate appliances which enable parasites to torture animals immeasurably superior to them, and which, from his point of view, no less imply prearrangement, I think the notes of admiration which end his descriptions would not have seemed to him or his readers so appropriate.

One more word there is from the intrinsic meaning of which Mr. Martineau deduces what appears a powerful argument—the word *Evolution* itself. He says:

"It means, to unfold from within; and it is taken from the history of the seed or embryo of living natures. And what is the seed but a casket of prearranged futurities, with its whole contents *prospective*, settled to be what they are by reference to ends still in the distance?"

Now, this criticism would have been very much to the point did the word Evolution truly express the process it names. If this process, as scientifically defined, really involved that conception which the word evolution was originally designed to convey, the implications would be those Mr. Martineau alleges. But, unfortunately for him, the word, having been in possession of the field before the process was understood, has been adopted merely because displacing it by another word seemed impracticable. And this adoption of it has been joined with a caution against misunderstandings arising from its unfitness. Here is a part of the caution: "Evolution has other meanings, some of which are incongruous with, and some even directly opposed to, the meaning here given to it. . . . The antithetical word, Involution, would much more truly express the nature of the process; and would, indeed, describe better the secondary characters of the process which we shall have to deal with presently."* So that the meanings which the word involves, and which Mr. Martineau regards as fatal to the hypothesis, are already repudiated as not belonging to the hypothesis.

And now, having dealt with the essential objections raised by Mr. Martineau to the Hypothesis of Evolution as it is presented under that purely scientific form which generalizes the process of things, firstly as observed, and secondly as inferred from certain ultimate principles, let me go on to examine that form of the Hypothesis which

* "First Principles," second edition, § 97.

he propounds—Evolution as determined by Mind and Will—Evolution as prearranged by a Divine Actor. For Mr. Martineau apparently abandons the primitive theory of creation by “flat of Almighty Will” and also the theory of creation by manufacture—by “a contriving and adapting power,” and seems to believe in Evolution; requiring only that “an originating Mind” shall be taken as its antecedent. Let us ask, first, in what relation Mr. Martineau conceives the “originating Mind” to stand to the evolving universe. From some passages it is inferable that he considers the “presence of mind” to be everywhere needful. He says:

“It is impossible to work the theory of Evolution upward from the bottom. If all force is to be conceived as one, its type must be looked for in the highest and all-comprehending term; and Mind must be conceived as there, and as divesting itself of some specialty at each step of its descent to a lower stratum of law, till represented at the base under the guise of simple Dynamics.”

This seems to be an unmistakable assertion that, wherever Evolution is going on, Mind is then and there behind it. At the close of the argument, however, a quite different conception is implied. Mr. Martineau says:

“If the Divine Idea will not retire at the bidding of our speculative science, but retains its place, it is natural to ask, What is its relation to the series of so-called Forces in the world? But the question is too large and deep to be answered here. Let it suffice to say, that there need not be any *overruling* of these forces by the Will of God, so that the supernatural should disturb the natural; or any *supplementing* of them, so that He should fill up their deficiencies. Rather is His thought related to them as, in man, the mental force is related to all below it.”

It would take too much space to deal fully with the various questions which this last passage raises. There is the question, Whence come these “Forces,” spoken of as

separate from the "Will of God"—did they preëxist? Then what becomes of the divine power? Do they exist by the divine Will? Then what kind of nature is that by which they act apart from the divine Will? Again, there is the question, How do these deputy-forces coöperate in each particular phenomenon, if the presiding Will is not there present to control them? Either an organ, which develops into fitness for its function, develops by the coöperation of these forces under the direction of Mind then present, or it so develops in the absence of Mind. If it develops in the absence of Mind, the hypothesis is given up; and if the "originating Mind" is required to be then and there present, we must suppose a particular providence to be present in each particular organ of each particular creature throughout the universe. Once more there is the question, If "His thought is related to them [these Forces] as, in Man, the mental force is related to all below it," how can "His thought" be regarded as the cause of Evolution? In man the mental force is related to the forces below it neither as a creator of them, nor as a regulator of them, save in a very limited way: the greater part of the forces present in man, both structural and functional, defy the mental force absolutely. Nay, more, it needs but to injure a nerve to see that the power of the mental force over the physical forces is dependent on conditions that are themselves physical, and one who takes morphia, in mistake for magnesia, discovers that the power of the physical forces over the mental is *unconditioned* by any thing mental.

Not dwelling on these questions, however, I will merely draw attention to the entire incongruity of this conception with the previous conception which I have quoted. Assuming that, when the choice is pressed on him, Mr. Martineau will choose the first, which alone has any thing

like defensibility, let us go on to ask how far Evolution is made more comprehensible by postulating Mind, universally immanent, as its cause.

In metaphysical controversy, many of the propositions propounded and accepted as quite believable are absolutely inconceivable. There is a perpetual confusing of actual ideas with what are nothing but pseud-ideas. No distinction is made between propositions that contain real thoughts, and propositions that are only the forms of thoughts. A thinkable proposition is one of which *the two terms can be brought together in consciousness under the relation said to exist between them*. But very often, when the subject of a proposition has been thought of as something known, and when the predicate has been thought of as something known, and when the relation alleged between them has been thought of as a known relation, it is supposed that the proposition itself has been thought. The thinking separately of the elements of a proposition is mistaken for the thinking of them in the combination which the proposition affirms. And hence it continually happens that propositions which cannot be rendered into thought at all are supposed to be not only thought but believed. The proposition that Evolution is caused by Mind is one of this nature. The two terms are separately intelligible; but they can be regarded in the relation of effect and cause only so long as no attempt is made to put them together in this relation.

The only thing which any one knows as Mind is the series of his own states of consciousness; and if he thinks of any mind other than his own, he can think of it only in terms derived from his own. If I am asked to frame a notion of Mind, divested of all those structural traits under which alone I am conscious of mind in myself, I cannot do it. I know nothing of thought save as carried on in

ideas originally traceable to the effects wrought by objects on me. A mental act is an unintelligible phrase if I am not to regard it as an act in which states of consciousness are severally known as like other states in the series that has gone by, and in which the relations between them are severally known as like past relations in the series. If, then, I have to conceive Evolution as caused by an "originating Mind," I must conceive this Mind as having attributes akin to those of the only mind I know, and without which I cannot conceive mind at all.

I will not dwell on the many incongruities hence resulting, by asking how the "originating Mind" is to be thought of as having states produced by things objective to it; as discriminating among these states, and classing them as like and unlike; and as preferring one objective result to another. I will simply ask, What happens if we ascribe to the "originating Mind" the character absolutely essential to the conception of mind, that it consists of a series of states of consciousness? Put a series of states of consciousness as cause, and the evolving universe as effect, and then endeavor to see the last as flowing from the first. I find it possible to imagine in some dim way a series of states of consciousness serving as antecedent to any one of the movements I see going on; for my own states of consciousness are often indirectly the antecedents to such movements. But how if I attempt to think of such a series as antecedent to *all* actions throughout the universe—to the motions of the multitudinous stars through space, to the revolutions of all their planets round them, to the gyrations of all these planets on their axes, to the infinitely-multiplied physical processes going on in each of these suns and planets? I cannot think of a single series of states of consciousness as causing even the relatively small group of actions going on over the earth's surface.

I cannot think of it even as antecedent to all the various winds and the dissolving clouds they bear, to the currents of all the rivers, and the grinding actions of all the glaciers ; still less can I think of it as antecedent to the infinity of processes simultaneously going on in all the plants that cover the globe, from scattered polar lichens to crowded tropical palms, and in all the millions of quadrupeds that roam among them, and the millions of millions of insects that buzz about them. Even to a single small set of these multitudinous terrestrial changes, I cannot conceive as antecedent a single series of states of consciousness—cannot, for instance, think of it as causing the hundred thousand breakers that are at this instant curling over on the shores of England. How, then, is it possible for me to conceive an “originating Mind,” which I must represent to myself as a *single* series of states of consciousness, working the infinitely-multiplied sets of changes *simultaneously* going on in worlds too numerous to count, dispersed throughout a space that baffles imagination ?

If, to account for this infinitude of physical changes everywhere going on, “Mind must be conceived as there ” “under the guise of simple Dynamics,” then the reply is that, to be so conceived, Mind must be divested of all attributes by which it is distinguished ; and that, when thus divested of its distinguishing attributes, the conception disappears—the word Mind stands for a blank. If Mr. Martineau takes refuge in the entirely different and, as it seems to me, incongruous hypothesis of something like a plurality of minds—if he accepts, as he seems to do, the doctrine that you cannot explain Evolution “unless among your primordial elements you scatter already the *germs* of Mind as well as the inferior elements”—if the insuperable difficulties I have just pointed out are to be met by assuming a local series of states of consciousness for each phenom-

enon, then we are obviously carried back to something like the old fetichistic notion, with the difference only, that the assumed spiritual agencies are indefinitely multiplied.

Clearly, therefore, the proposition that an "originating Mind" is the cause of Evolution is a proposition that can be entertained so long only as no attempt is made to unite in thought its two terms in the alleged relation. That it should be accepted as a matter of *faith*, may be a defensible position, provided good cause is shown why it should be so accepted ; but that it should be accepted as a matter of *understanding*—as a statement making the order of the universe comprehensible—is a quite indefensible position.

Here let me guard myself against a misinterpretation very likely to be put upon the foregoing arguments—especially by those who have read the Essay to which they reply. The statements of that Essay carry the implication that all who adhere to the hypothesis it combats imagine they have solved the mystery of things when they have shown the processes of Evolution to be naturally caused. Mr. Martineau tacitly represents them as believing that, when every thing has been interpreted in terms of Matter and Motion, nothing remains to be explained. This, however, is by no means the fact. The Doctrine of Evolution, under its purely scientific form, does not involve Materialism, though its opponents persistently represent it as doing so. Indeed, among adherents of it who are friends of mine, there are those who speak of the Materialism of Buchner and his school, with a contempt certainly not less than that felt by Mr. Martineau. To show how anti-materialistic my own view is, I may, perhaps, without impropriety, quote some out of many passages which I have written on the question elsewhere :

"Hence, though of the two it seems easier to translate so-called Matter into so-called Spirit, than to translate so-called Spirit into so-called Matter (which latter is, indeed, wholly impossible), yet no translation can carry us beyond our symbols." *

And again :

"See, then, our predicament. We can think of Matter only in terms of Mind. We can think of Mind only in terms of Matter. When we have pushed our explorations of the first to the uttermost limit, we are referred to the second for a final answer ; and, when we have got the final answer of the second, we are referred back to the first for an interpretation of it. We find the value of x in terms of y ; then we find the value of y in terms of x ; and so on we may continue forever, without coming nearer to a solution. The antithesis of subject and object, never to be transcended while consciousness lasts, renders impossible all knowledge of that Ultimate Reality in which subject and object are united." †

It is thus, I think, manifest that the difference between Mr. Martineau's view and the view he opposes is by no means so wide as he makes it appear ; and further, it seems to me that such difference as exists is rather the reverse of that indicated by his exposition. Briefly expressed, the difference is that, where he thinks there is no mystery, the doctrine he combats recognizes a mystery. Speaking for myself only, I may say that, agreeing entirely with Mr. Martineau in repudiating the materialistic interpretation as utterly futile, I differ from him simply in this, that while he says he has found another interpretation, I confess that I cannot find any interpretation ; while he holds that he can understand the Power which is manifested in things, I feel obliged to admit, after many failures, that I cannot understand it. So that, in presence of the transcendent problem which the universe presents, Mr. Martineau regards the human intellect as capable, and

* "Principles of Psychology," second edition, vol. i., § 68.

† Ibid., § 272.

I as incapable. This contrast does not appear to me of the kind which his Essay tacitly asserts. If there is such a thing as the "pride of Science," it is obviously exceeded by the pride of Theology. I fail to perceive humility in the belief that the human mind is able to comprehend that which is behind appearances ; and I do not see how piety is especially exemplified in the assertion that the Universe contains no mode of existence higher in Nature than that which is present to us in consciousness. On the contrary, I think it quite a defensible proposition that humility is better shown by a confession of incompetence to grasp in thought the Cause of all things ; and that the religious sentiment may find its highest sphere in the belief that the Ultimate Power is no more representable in terms of human consciousness than human consciousness is representable in terms of a plant's functions.

Other parts of Mr. Martineau's argument I pass over as being met by implication in the above replies. I will now add only that, should any further explanation be required, I must postpone it until I am free from present special engagements.

XI.

REPLIES TO CRITICISMS.

[FROM THE FORTNIGHTLY REVIEW FOR NOVEMBER AND DECEMBER, 1873.]

REPLIES TO CRITICISMS.

WHEN made by a competent reader, an objection usually implies one of two things. Either the statement to which he demurs is wholly or partially untrue; or, if true, it is presented in such a way as to permit misapprehension. A need for some change or addition is in any case shown.

Not recognizing the errors alleged, but thinking rather that misapprehensions cause the dissent of those who have attacked the metaphysico-theological doctrines held by me, I propose here to meet, by explanations and arguments, the chief objections urged: partly with the view of justifying these doctrines, and partly with the view of guarding against the wrong interpretations which it appears are apt to be made.

The pages of a periodical intended for general reading may be thought scarcely fitted for the treatment of these highly abstract questions. There is now, however, so considerable a class interested in them, and they are so deeply involved with the great changes of opinion in progress, that I have ventured to hope for readers outside the circle of those who occupy themselves with philosophy.

Of course the criticisms to be noticed I have selected, either because of their intrinsic force, or because they come from men whose positions or reputations give them

weight. To meet more than a few of my opponents is out of the question.

Let me begin with a criticism contained in the sermon preached by the Rev. Principal Caird before the British Association, on the occasion of its meeting in Edinburgh, in August, 1871. Expressed with a courtesy which, happily, is now less rare than of yore in theological controversy, Dr. Caird's objection might, I think, be admitted without involving essential change in the conclusion demurred to; while it might be shown to tell with greater force against the conclusions of thinkers classed as orthodox, Sir W. Hamilton and Dean Mansel, than against my own. Describing this as set forth by me, Dr. Caird says:—

“His thesis is that the provinces of science and religion are distinguished from each other as the known from the unknown and unknowable. This thesis is maintained mainly on a critical examination of the nature of human intelligence, in which the writer adopts and carries to its extreme logical results the doctrine of the relativity of human knowledge which, propounded by Kant, has been reproduced with special application to theology by a famous school of philosophers in this country. From the very nature of human intelligence, it is attempted to be shown that it can only know what is finite and relative, and that therefore the absolute and infinite the human mind is, by an inherent and insuperable disability, debarred from knowing. . . . May it not be asked, for one thing, whether in the assertion, as the result of an examination of the human intellect, that it is incapable of knowing what lies beyond the finite, there is not involved an obvious self-contradiction? The examination of the mind can be conducted only by the mind, and if the instrument be, as is alleged, limited and defective, the result of the inquiry must partake of that defectiveness. Again, does not the knowledge of a limit imply already the power to transcend it? In affirming that human science is incapable of crossing the bounds of the finite world, is it not a necessary presupposition that you who so affirm have crossed these bounds?”

That this objection is one I am not disinclined to recog-

nize, will be inferred when I state that it is one I have myself raised. While preparing the second edition of the *Principles of Psychology*, I found, among my memoranda, a note which still bore the wafers by which it had been attached to the original manuscript (unless, indeed, it had been transferred from the MS. of *First Principles*, which its allusion seems to imply). It was this:—

“I may here remark in passing that the several reasonings, including the one above quoted, by which Sir William Hamilton would demonstrate the pure relativity of our knowledge—reasonings which clearly establish many important truths, and with which in the main I agree—are yet capable of being turned against himself, when he definitely concludes that it is impossible for us to know the absolute. For to positively assert that the absolute cannot be known, is in a certain sense to assert a *knowledge* of it—is to *know* it as *unknowable*. To affirm that human intelligence is confined to the conditioned, is to put an *absolute limit* to human intelligence, and implies *absolute knowledge*. It seems to me that the ‘learned ignorance’ with which philosophy ends, must be carried a step further; and instead of positively saying that the absolute is unknowable, we must say that we cannot tell whether it is knowable or not.”

Why I omitted this note I cannot now remember. Possibly it was because re-consideration disclosed a reply to the contained objection. For while it is true that the intellect cannot prove its own competence, since it must postulate its own competence in the course of the proof, and so beg the question; yet it does not follow that it cannot prove its own incompetence respecting questions of certain kinds. Its inability in respect of such questions has two conceivable causes. It may be that the deliverances of Reason in general are invalid, in which case the incompetence of Reason to solve questions of a certain class is implied by its general incompetence; or it may be that the deliverances of Reason, valid within a certain range, themselves end in the conclusion that

Reason is incapable beyond that range. So that while there can be no proof of competence, because competence is postulated in each step of the demonstration, there may be proof of incompetence either (1) if the successive deliverances forming the steps of the demonstration, by severally evolving contradictions, show their untrustworthiness, or (2) if, being trustworthy, they lead to the result that on certain questions Reason cannot give any deliverance.

Reason leads both inductively and deductively to the conclusion that the sphere of Reason is limited. Inductively, this conclusion expresses the result of countless futile attempts to transcend this sphere—attempts to understand Matter, Motion, Space, Time, Force, in their ultimate natures—attempts which, bringing us always to alternative impossibilities of thought, warrant the inference that such attempts will continue to fail, as they have hitherto failed. Deductively, this conclusion expresses the result of mental analysis, which shows us that the product of thought is in all cases a relation, identified as such or such; that the process of thought is the identification and classing of relations; that therefore Being in itself, out of relation, is unthinkable, as not admitting of being brought within the form of thought. That is to say, deduction explains that failure of Reason established as an induction from many experiments. And to call in question the ability of Reason to give this verdict against itself, in respect of these transcendent problems, is to call in question its ability to draw valid conclusions from premises; which is to assert a general incompetence necessarily inclusive of the special incompetence.

Closely connected with the foregoing, is a criticism from

Dr. Mansel, on which I may here make some comments. In a note to his *Philosophy of the Conditioned* (p. 39), he says:—

“Mr. Herbert Spencer, in his work on *First Principles*, endeavours to press Sir W. Hamilton into the service of Pantheism and Positivism together” [a somewhat strange assertion, by the way, considering that I reject them both], “by adopting the negative portion only of his philosophy—in which, in common with many other writers, he declares the absolute to be inconceivable by the mere intellect,—and rejecting the positive portions, in which he most emphatically maintains that the belief in a personal God is imperatively demanded by the facts of our moral and emotional consciousness. . . . Sir W. Hamilton’s fundamental principle is, that consciousness must be accepted entire, and that the moral and religious feelings, which are the primary source of our belief in a personal God, are in no way invalidated by the merely negative inferences which have deluded men into the assumption of an impersonal absolute. . . . Mr. Spencer, on the other hand, takes these negative inferences as the only basis of religion, and abandons Hamilton’s great principle of the distinction between knowledge and belief.”

Putting these statements in the order most convenient for discussion, I will deal first with the last of them. Instead of saying what he does, Dr. Mansel should have said that I decline to follow Sir W. Hamilton in confounding two distinct, and indeed radically-opposed, meanings of the word *belief*. This word “is habitually applied to dicta of consciousness for which no proof can be assigned: both those which are unprovable because they underlie all proof, and those which are unprovable because of the absence of evidence.”* In the pages of this Review for July, 1865, I exhibited this distinction as follows:—

“We commonly say we ‘believe’ a thing for which we can assign some preponderating evidence, or concerning which we have received

* *Principles of Psychology*, Second Edition, § 425, note.

some indefinable impression. We *believe* that the next House of Commons will not abolish Church-rates ; or we *believe* that a person on whose face we look is good-natured. That is, when we can give confessedly-inadequate proofs, or no proofs at all, for the things we think, we call them 'beliefs.' And it is the peculiarity of these beliefs, as contrasted with cognitions, that their connexions with antecedent states of consciousness may be easily severed, instead of being difficult to sever. But unhappily, the word 'belief' is also applied to each of those temporarily or permanently indissoluble connexions in consciousness, for the acceptance of which the only warrant is that it cannot be got rid of. Saying that I feel a pain, or hear a sound, or see one line to be longer than another, is saying that there has occurred in me a certain change of state ; and it is impossible for me to give a stronger evidence of this fact than that it is present to my mind. . . . 'Belief' having, as above pointed out, become the name of an impression for which we can give only a confessedly-inadequate reason, or no reason at all ; it happens that when pushed hard respecting the warrant for any ultimate dictum of consciousness, we say, in the absence of all assignable reason, that we *believe* it. Thus the two opposite poles of knowledge go under the same name ; and by the reverse connotations of this name, as used for the most coherent and least coherent relations of thought, profound misconceptions have been generated."

Now that the belief which the moral and religious feelings are said to yield of a personal God, is not one of the beliefs which are unprovable because they underlie all proof, is obvious. It needs but to remember that in works on Natural Theology, the existence of a personal God is *inferred* from these moral and religious feelings, to show that it is not contained in these feelings themselves, or joined with them as an inseparable intuition. It is not a belief like the beliefs which I now have that this is daylight, and that there is open space before me—beliefs which cannot be proved because they are of equal simplicity with, and of no less certainty than, each step in a demonstration. Were it a belief of this most certain kind, argument would be superfluous : all races of men

and every individual would have the belief in an inexpugnable form. Hence it is manifest that, confusing the two very different states of consciousness called beliefs, Sir W. Hamilton ascribes to the second a certainty that belongs only to the first.

Again, neither Sir W. Hamilton nor Dr. Mansel has enabled us to distinguish those "facts of our moral and emotional consciousness" which imperatively demand the belief in a personal God, from those facts of our (or of men's) "moral and emotional consciousness" which, in those having them, imperatively demand beliefs that Sir W. Hamilton would regard as untrue. A New Zealand chief, discovering his wife in an infidelity, killed the man; the wife then killed herself that she might join her lover in the other world; and the chief thereupon killed himself that he might go after them to defeat this intention. These two acts of suicide furnish tolerably strong evidence that these New Zealanders believed in another world to which they could go at will, and fulfil their desires as they did here. If they were asked the justification for this belief, and if the arguments by which they sought to establish it were not admitted, they might still fall back on emotional consciousness as yielding them an unshakable foundation for it. I do not see why a Fiji Islander, adopting the Hamiltonian argument, should not justify by it his conviction that after being buried alive, his life in the other world, forthwith commencing at the age he has reached in this, will similarly supply him with the joys of conquest and the gratifications of cannibalism. That he has a conviction to this effect stronger than the religious convictions current among civilized people, is proved by the fact that he goes to be buried alive quite willingly. And as we may presume that his conviction is not the outcome of a

demonstration, it must be the outcome of some state of feeling—some “emotional consciousness.” Why, then, should he not assign the “facts” of his “emotional consciousness” as “imperatively demanding” this belief. Manifestly, this principle that “consciousness must be accepted entire,” either obliges us to accept as true the superstitions of all mankind, or else obliges us to say that the consciousness of a certain limited class of cultivated people is alone meant. If things are to be believed simply because the facts of emotional consciousness imperatively demand the beliefs, I do not see why the actual existence of a ghost in a house, is not inevitably implied by the intense fear of it that is aroused in the child or the servant.

Lastly, and chiefly, I have to deal with Dr. Mansel’s statement that “Mr. Spencer, on the other hand, takes these negative inferences as the only basis of religion.” This statement is exactly the reverse of the truth; since I have contended, against Hamilton and against him, that the consciousness of that which is manifested to us through phenomena is *positive*, and not *negative* as they allege, and that this positive consciousness supplies an indestructible basis for the religious sentiment (*First Principles*, § 26). Instead of giving here passages to show this, I may fitly quote the statement and opinion of a foreign theologian. M. le pasteur Grotz, of the Reformed Church at Nismes, writes thus:—

“La science serait-elle donc par nature ennemie de la religion ? pour être religieux, faut-il proscrire la science ?—C’est la science, la science expérimentale qui va maintenant parler en faveur de la religion ; c’est elle qui, par la bouche de l’un des penseurs . . . de notre époque, M. Herbert Spencer, va répondre à la fois à M. Vacherot et à M. Comte.”

* * * * *

“Ici, M. Spencer discute la théorie de l’inconditionné ; entendez

par ce mot : Dieu. Le philosophe écossais, Hamilton, et son disciple, M. Mansel, disent comme nos positivistes français : ' Nous ne pouvons affirmer l'existence positive de quoi que ce soit au delà des phénomènes.' Seulement, Hamilton et son disciple se séparent de nos compatriotes en faisant intervenir une 'révélation merveilleuse' qui nous fait croire à l'existence de l'inconditionné, et grâce à cette révélation vraiment merveilleuse, toute l'orthodoxie revient. Est-il vrai que nous ne puissions rien affirmer au delà des phénomènes ? M. Spencer déclare qu'il y a dans cette assertion une grave erreur. Le côté logique, dit-il fort justement, n'est pas le seul ; il y a aussi le côté psychologique, et, selon nous, il prouve que l'existence positive de l'absolu est une donnée nécessaire de la conscience."

" Là est la base de l'accord entre la religion et la science. Dans un chapitre . . . intitulé *Réconciliation*, M. Spencer établit et développe cet accord sur son véritable terrain."

* * * * *

" M. Spencer, en restant sur le terrain de la logique et de la psychologie, et sans recourir à une intervention surnaturelle, a établi la légitimité, la nécessité et l'éternelle durée du sentiment religieux et de la religion."*

I turn next to what has been said by Dr. Shadworth H. Hodgson, in his essay on " The Future of Metaphysic," published in the *Contemporary Review* for November, 1872. Remarking only, with respect to the agreements he expresses in certain views of mine, that I value them as coming from a thinker of subtlety and independence, I will confine myself here to his disagreements. Dr. Hodgson, before giving his own view, briefly describes and criticizes the views of Hegel and Comte, with both of whom he partly agrees and partly disagrees, and then proceeds to criticize the view set forth by me. After a preliminary brief statement of my position, to the wording of which I demur, he goes on to say :—

" In his *First Principles*, Part 1, second ed., there is a chapter

* *Le Sentiment Religieux*, par A. Grotz. Paris, J. Cherbuliez, 1870.

headed 'Ultimate Scientific Ideas,' in which he enumerates six such ideas or groups of ideas, and attempts to show that they are entirely incomprehensible. The six are:—1. Space and Time. 2. Matter. 3. Rest and Motion. 4. Force. 5. Consciousness. 6. The Soul, or the Ego. Now to enter at length into all of these would be an undertaking too large for the present occasion; but I will take the first of the six, and endeavour to show in its case the entire untenability of Mr. Spencer's view; and since the same arguments may be employed against the rest, I shall be content that my case against them should be held to fail if my case should fail in respect to Space and Time."

I willingly join issue with Dr. Hodgson on these terms; and proceed to examine, one by one, the several arguments he uses to show the invalidity of my conclusions. Following his criticisms in the order he has chosen, I begin with the sentence following that which I have just quoted. The first part of it runs thus:—"The metaphysical view of Space and Time is, that they are elements in all phenomena, whether the phenomena are presentations or representations."

Whether, by "the metaphysical view," is here meant the view of Kant, whether it means Dr. Hodgson's own view, or whether the expression has a more general meaning, I have simply to reply that the metaphysical view is incorrect. Dealing with the Kantian version of this doctrine, that Space is a form of intuition, I have pointed out that only with certain classes of phenomena is Space united indissolubly; that Kant habitually considers phenomena belonging to the visual and tactual groups, with which the consciousness of space is inseparably joined, and overlooks groups with which it is not inseparably joined. Though in the adult, perception of sound has certain space-implications, mostly, if not wholly, acquired by individual experience; and though it would seem from the instructive experiments of Mr. Spalding, that in creatures born with nervous systems

much more organized than our own are at birth, there is some innate perception of the side from which a sound comes; yet it is demonstrable that the space-implications of sound are not originally given with the sensation as its form of intuition. Bearing in mind the Kantian doctrine, that Space is the form of sensuous intuitions not only as *presented* but also as *represented*, let us examine critically our musical ideas. As I have elsewhere suggested to the reader—

“Let him observe what happens when some melody takes possession of his imagination. Its tones and cadences go on repeating themselves apart from any space-consciousness—they are not localized. He may or may not be reminded of the place where he heard them—this association is incidental only. Having observed this, he will see that such space-implications as sounds have, are learnt in the course of individual experience, and are not given with the sounds themselves. Indeed, if we refer to the Kantian definition of form, we get a simple and conclusive proof of this. Kant says form is ‘that which effects that the content of the phenomenon can be arranged under certain relations.’ How then can the content of phenomenon we call sound be arranged? Its parts can be arranged in order of sequence—that is, in Time. But there is no possibility of arranging its parts in order of coexistence—that is, in Space. And it is just the same with odour. Whoever thinks that sound and odour have Space for their form of intuition, may convince himself to the contrary by trying to find the right and left sides of a sound, or to imagine an odour turned the other way upwards.”—*Principles of Psychology*, § 399.—Note.

As I thus dissent, not I think without good reason, from “the metaphysical view of Space and Time” as “elements in all phenomena,” it will naturally be expected that I dissent from the first criticism which Dr. Hodgson proceeds to deduce from it. Dealing first with the arguments I have used to show the incomprehensibility of Space and Time, if we consider them as objective, and stating in other words the conclusion I draw, that “as Space and Time cannot be either non-

entities nor the attributes of entities, we have no choice but to consider them as entities." Dr. Hodgson continues :—

"So far good. Secondly, he argues that they cannot be represented in thought as such real existences, because 'to be conceived at all, a thing must be conceived as having attributes.' Now here the metaphysical doctrine enables us to conceive them as real existences, and rebuts the argument for their inconceivability; for the other element, the material element, the feeling or quality occupying Space and Time stands in the place and performs the function of the required attributes, composing together with the space and time which is occupied the empirical phenomena of perception. So far as this argument of Mr. Spencer goes, then, we are entitled to say that his case for the inconceivability of Space and Time as real existences is not made out."

Whether the fault is in me or not I cannot say, but I fail to see that my argument is thus rebutted. On the contrary, it appears to me substantially conceded. What kind of entity is that which can exist only when occupied by something else? Dr. Hodgson's own argument is a tacit assertion that Space *by itself* cannot be conceived as an existence; and this is all that I have alleged.

Dr. Hodgson deals next with the further argument, familiar to all readers, which I have added as showing the insurmountable difficulty in the way of conceiving Space and Time as objective entities; namely, that "all entities which we actually know as such are limited. . . . But of Space and Time we cannot assert either limitation, or the absence of limitation." Without quoting at length the reasons Dr. Hodgson gives for distinguishing between Space as *perceived* and Space as *conceived*, it will suffice if I quote his own statement of the result to which they bring him: "So that Space and Time as perceived are not finite, but infinite, as conceived, are not infinite, but finite."

Most readers will, I think, be startled by the assertion that conception is less extensive in range than perception; but, without dwelling on this, I will content myself by asking in what case Space is perceived as infinite? Surely Dr. Hodgson does not mean to say that he can perceive the whole surrounding Space at once—that the Space behind is united in perception with the Space in front. Yet this is the necessary implication of his words. Taking his statement less literally, however, and not dwelling on the fact that in perception Space is habitually bounded by objects more or less distant, let us test his assertion under the most favourable conditions. Supposing the eye directed upwards towards a clear sky; is not the space then perceived, laterally limited? The visual area, restricted by the visual apertures, cannot include in perception even 180° from side to side, and is still more confined in a direction at right angles to this. Even in the third direction, to which alone Dr. Hodgson evidently refers, it cannot properly be said that it is infinite in perception. Look at a position in the sky a thousand miles off. Now look at a position a million miles off. What is the difference in perception? Nothing. How then can an infinite distance be perceived when these immensely-unlike finite distances cannot be perceived as differing from one another, or from an infinite distance? Dr. Hodgson has used the wrong word. Instead of saying that Space as perceived is infinite, he should have said that, in perception, Space is finite in two dimensions, and becomes *indefinite* in the third when this becomes great.

I come now to the paragraph beginning “Mr. Spencer then turns to the second or subjective hypothesis, that of Kant.” This paragraph is somewhat difficult to deal with, for the reason that in it my reasoning is criticized

both from the Kantian point of view and from Dr. Hodgson's own point of view. Dissenting from Kant's view, Dr. Hodgson says, "I hold that both Space and Time and Feeling, or the material element, are equally and alike subjective, equally and alike objective." As I cannot understand this, I am unable to deal with those arguments against me which Dr. Hodgson bases upon it, and must limit myself to that which he urges on behalf of Kant. He says:—

"But I think that Mr. Spencer's representation of Kant's view is very incorrect; he seems to be misled by the large term non-ego. Kant held that Space and Time were *in their origin* subjective, but when applied to the non-ego resulted in phenomena, and were the formal element in those phenomena, among which some were phenomena of the internal sense or ego, others of the external sense or non-ego. The non-ego to which the forms of Space and Time did not apply and did not belong, was the Ding-an-sich, not the phenomenal non-ego. Hence the objective existence of Space and Time in phenomena, but not in the Ding-an-sich, is a consistent and necessary consequence of Kant's view of their subjective origin."

If I have misunderstood Kant, as thus alleged, then my comment must be that I credited him with an hypothesis less objectionable than that which he held. I supposed his view to be that Space, as a form of intuition belonging to the *ego*, is imposed by it on the *non-ego* (by which I understood the thing in itself) in the act of intuition. But now the Kantian doctrine is said to be that Space, originating in the *ego*, when applied to the *non-ego*, results in phenomena (the *non-ego* meant being, in that case, necessarily the Ding-an-sich, or thing in itself); and that the phenomena so resulting become objective existences along with the Space given to them by the subject. The subject having imposed Space as a form on the primordial object, or thing in itself, and so created phenomena, this Space thereupon becomes

an objective existence, independent of both the subject and the original thing in itself! To Dr. Hodgson this may seem a more tenable position than that which I ascribed to Kant; but to me it seems only a multiplication of inconceivabilities. I am content to leave it as it stands: not feeling my reasons for rejecting the Kantian hypothesis much weakened.*

The remaining reply which Dr. Hodgson makes runs thus:—

“But Mr. Spencer has a second argument to prove this inconceivability. It is this:—‘If Space and Time are forms of thought, they can never be thought of; since it is impossible for anything to be at once the *form* of thought and the *matter* of thought.’ . . . An instance will show the fallacy best. Syllogism is usually held to be a form of thought. Would it be any argument for the inconceivability of syllogisms to say, they cannot be at once the form and the matter of thought? Can we not syllogize about syllogism? Or, more plainly still,—no dog can bite himself, for it is impossible to be at once the thing that bites and the thing that is bitten.”

Had Dr. Hodgson quoted the whole of the passage from which he takes the above sentence; or had he considered it in conjunction with the Kantian doctrine to which it refers (namely, that Space survives in conscious-

* Instead of describing me as misunderstanding Kant on this point, Dr. Hodgson should have described Kant as having, in successive sentences, so changed the meanings of the words he uses, as to make either interpretation possible. At the outset of his *Critique of Pure Reason*, he says:—“The effect of an object upon the faculty of representation, so far as we are affected by the said object, is sensation. That sort of intuition which relates to an object by means of sensation, is called an empirical intuition. The undetermined object of an empirical intuition, is called *phænomenon*. That which in the *phænomenon* corresponds to the sensation, I term its *matter* ;” (here, remembering the definition just given of *phænomenon*, objective existence is manifestly referred to) “but that which effects that the content of the *phænomenon* can be arranged under certain relations, I call its *form*” (so that *form*, as here applied, refers

ness when all contents are expelled, which implies that then Space is the thing with which consciousness is occupied, or the *object* of consciousness), he would have seen that his reply has none of the cogency he supposes. If, taking his first illustration, he will ask himself whether it is possible to "syllogize about syllogism," when syllogism has no content whatever, symbolic or other—has nonentity to serve for major, nonentity for minor, and nonentity for conclusion; he will, I think, see that syllogism, considered as surviving terms of every kind, cannot be syllogized about: the "pure form" of reason (supposing it to be syllogism, which it is not) if absolutely discharged of all it contains, cannot be represented in thought, and therefore cannot be reasoned about. Following Dr. Hodgson to his second illustration, I must express my surprise that a metaphysician of his acuteness should have used it. For an illustration to have any value, the relation between the terms of the analogous case must have some parallelism to the relation between the terms of the case with which it is compared. Does Dr. Hodgson really think that the relation between a dog and the part of himself which he bites, is like the relation between *matter* and *form*? Suppose the dog bites his tail. Now the dog, as biting, stands, according to Dr. Hodgson, for the form as the containing mental faculty; and the tail, as bitten, stands for this mental faculty as contained. Now suppose the dog loses his tail. Can the

to objective existence). "But that in which our sensations are merely arranged, and by which they are susceptible of assuming a certain form, cannot be itself sensation." (In which sentence the word *form* obviously refers to subjective existence.) At the outset, the 'phenomenon' and the 'sensation' are distinguished as objective and subjective respectively; and then, in the closing sentences, the *form* is spoken of in connexion first with the one and then with the other, as though they were the same.

faculty as containing and the faculty as contained be separated in the same way? Does the mental form when deprived of all content, even itself (granting that it can be its own content), continue to exist in the same way that a dog continues to exist when he has lost his tail? Even had this illustration been applicable, I should scarcely have expected Dr. Hodgson to remain satisfied with it. I should have thought he would prefer to meet my argument directly, rather than indirectly. Why has he not shown the invalidity of the reasoning used in the *Principles of Psychology* (§ 399, 2nd ed.)? Having there quoted the statement of Kant, that "Space and Time are not merely forms of sensuous intuition, but *intuitions* themselves;" I have written—

"If we inquire more closely, this irreconcilability becomes still clearer. Kant says:—'That which in the phenomenon corresponds to the sensation, I term its *matter*; but that which effects that the content of the phenomenon can be arranged under certain relations, I call its *form*.' Carrying with us this definition of form, as 'that which effects that the content . . . can be arranged under certain relations,' let us return to the case in which the intuition of Space is the intuition which occupies consciousness. Can the content of this intuition 'be arranged under certain relations' or not? It can be so arranged, or rather, it *is* so arranged. Space cannot be thought of save as having parts, near and remote, in this direction or the other. Hence, if that is the form of a thing 'which effects that the content . . . can be arranged under certain relations,' it follows that when the content of consciousness is the intuition of Space, which has 'parts that can be arranged under certain relations,' there must be a form of that intuition. What is it? Kant does not tell us—does not appear to perceive that there must be such a form; and—could not have perceived this without abandoning his hypothesis that the space-intuition is primordial."

Now when Dr. Hodgson has shown me how that "which effects that the content . . . can be arranged under certain relations," may also be that which effects its own arrangement under the same relations, I shall

be ready to surrender my position ; but until then, no analogy drawn from the ability of a dog to bite himself will weigh much with me.

Having, as he considers, disposed of the reasons given by me for concluding that, considered in themselves, "Space and Time are wholly incomprehensible" (he continually uses on my behalf the word "inconceivable," which, by its unfit connotations, gives a wrong aspect to my position), Dr. Hodgson goes on to say:—

"Yet Mr. Spencer proceeds to use these inconceivable ideas as the basis of his philosophy. For mark, it is Space and Time as we know them, the actual and phenomenal Space and Time, to which all these inconceivabilities attach. Mr. Spencer's result ought, therefore, logically to be—Scepticism. What is his actual result? Ontology. And how so? Why, instead of rejecting Space and Time as the inconceivable things he has tried to demonstrate them to be, he substitutes for them an Unknowable, a something which they really are, though we cannot know it, and rejects that, instead of them, from knowledge."

This statement has caused me no little astonishment. That having before him the volume from which he quotes, so competent a reader should have so completely missed the meaning of the passages (§ 26) already referred to, in which I have contended against Hamilton and Mansel, makes me almost despair of being understood by any ordinary reader. In that section I have, in the first place, contended that the consciousness of an Ultimate Reality, though not capable of being made a thought, properly so called, because not capable of being brought within limits, nevertheless remains as a consciousness that is *positive*: is not rendered *negative* by the negations of limits. I have pointed out that—

"The error, (very naturally fallen into by philosophers intent on demonstrating the limits and conditions of consciousness), consists in assuming that consciousness contains *nothing but* limits and conditions; to the entire neglect of that which is limited and con-

ditioned. It is forgotten that there is something which alike forms the raw material of definite thought and remains after the definiteness which thinking gave to it has been destroyed"—something which "ever persists in us as the body of a thought to which we can give no shape."

This *positive* element of consciousness it is which, "at once necessarily indefinite and necessarily indestructible," I regard as the consciousness of the Unknowable Reality. Yet Dr. Hodgson says "Mr. Spencer proceeds to use these inconceivable ideas as the basis of his philosophy:" implying that such basis consists of negations, instead of consisting of that which persists *notwithstanding the negation of limits*. And then, beyond this perversion, or almost inversion, of meaning, he conveys the notion that I take as the basis of philosophy, the "inconceivable ideas" "or self-contradictory notions" which result when we endeavour to comprehend Space and Time. He speaks of me as proposing to evolve substance out of form, or rather, out of the negations of forms—gives his readers no conception that the *Power* manifested to us is that which I regard as the Unknowable, while what we call Space and Time answer to the unknowable *nexus* of its manifestations. And yet the chapter from which I quote, and still more the chapter which follows it, makes this clear—as clear, at least, as I can make it by carefully-worded statements and re-statements.

Philosophical systems, like theological ones, following the law of evolution in general, severally become in course of time more rigid, while becoming more complex and more definite; and they similarly become less alterable—resist all compromise, and have to be replaced by the more plastic systems that descend from them.

It is thus with pure Empiricism and pure Transcendentalism. Down to the present time disciples of Locke

have continued to hold that all mental phenomena are interpretable as results of accumulated individual experiences; and, by criticism, have been led simply to elaborate their interpretations—ignoring the proofs of inadequacy. On the other hand, disciples of Kant, asserting this inadequacy, and led by perception of it to adopt an antagonist theory, having persisted in defending that theory under a form presenting fatal inconsistencies. And then, when there is offered a mode of reconciliation, the spirit of no-compromise is displayed: each side continuing to claim the whole truth. After it has been pointed out that all the obstacles in the way of the experiential doctrine disappear if the effects of ancestral experiences are joined with the effects of individual experiences, the old form of the doctrine is still adhered to. And meanwhile Kantists persist in asserting that the *ego* is born with intuitional forms which are wholly independent of anything in the *non-ego*, after it has been shown that the innateness of these intuitional forms may be so understood as to escape the insurmountable difficulties of the hypothesis as originally expressed.

I am led to say this by reading the remarks concerning my own views, made with an urbanity I hope to imitate, by Professor Max Müller, in a lecture delivered at the Royal Institution last March.* Before dealing with the criticisms contained in this lecture, I must enter a demurrer against that interpretation of my views by which Professor Max Müller makes it appear that they are more allied to those of Kant than to those of Locke. He says:—

“ Whether the prehistoric genesis of these congenital dispositions or inherited necessities of thought, as suggested by Mr. Herbert Spencer, be right or wrong, does not signify for the purpose which

* See *Fraser's Magazine* for May last.

Kant had in view. In admitting that there is something in our mind, which is not the result of our own *a posteriori* experience, Mr. Herbert Spencer is a thorough Kantian, and we shall see that he is a Kantian in other respects too. If it could be proved that nervous modifications, accumulated from generation to generation, could result in nervous structures that are fixed in proportion as the outer relations to which they answer are fixed, we, as followers of Kant, should only have to put in the place of Kant's intuitions of Space and Time 'the constant space-relations expressed in definite nervous structures, congenitally framed to act in definite ways, and incapable of acting in any other way.' If Mr. Herbert Spencer had not misunderstood the exact meaning of what Kant calls the intuitions of Space and Time, he would have perceived that, barring his theory of the prehistoric origin of these intuitions, he was quite at one with Kant."

On this passage let me remark, first, that the word "pre-historic," ordinarily employed only in respect to human history, is misleading when applied to the history of Life in general; and his use of it leaves me in some doubt whether Professor Max Müller has rightly conceived the hypothesis he refers to.

My second comment is, that the description of me as "quite at one with Kant," "*barring*" the "theory of the prehistoric origin of these intuitions," curiously implies that it is a matter of comparative indifference whether the forms of thought are held to be *naturally generated* by intercourse between the organism and its environing relations, during the evolution of the lowest into the highest types, or whether such forms are held to be *supernaturally given* to the human mind, and are independent both of environing relations and of ancestral minds. But now, addressing myself to the essential point, I must meet the statement that I have "misunderstood the exact meaning of what Kant calls the intuitions of Space and Time," by saying that I think Professor Max Müller has overlooked certain passages which justify my interpretation, and render his inter-

pretation untenable. For Kant says "Space is *nothing else* than the form of all phenomena of the external sense;" further, he says that "Time is *nothing but* the form of our internal intuition;" and, to repeat words I have used elsewhere, "He distinctly shuts out the supposition that there are forms of the *non-ego* to which these forms of the *ego* correspond, by saying that 'Space is not a conception which has been derived from outward experiences.'" Now so far from being in harmony with, these statements are in direct contradiction to, the view which I hold; and seem to me absolutely irreconcilable with it. How can it be said that, "barring" a difference represented as trivial, I am "quite at one with Kant," when I contend that these subjective forms of intuition are moulded into correspondence with, and therefore derived from, some objective form or *nexus*, and therefore dependent upon it; while the Kantian hypothesis is that these subjective forms are not derived from the object, but pre-exist in the subject—are imposed by the *ego* on the *non-ego*. It seems to me that not only do Kant's words, as above given, exclude the view which I hold, but also that Kant could not consistently have held any such view. Rightly recognizing, as he did, these forms of intuition as innate, he was, from his stand-point, *obliged* to regard them as imposed on the matter of intuition in the act of intuition. In the absence of the hypothesis that intelligence has been evolved, it was *not possible* for him to regard these subjective forms as having been derived from objective forms.

A disciple of Locke might, I think, say that the Evolution-view of our consciousness of Space and Time is essentially Lockian, with more truth than Professor Max Müller can represent it as essentially Kantian. The Evolution-view is completely experiential. It differs

from the original view of the experientialists by containing a great extension of that view. With the relatively-small effects of individual experiences, it joins the relatively-vast effects of the experiences of antecedent individuals. But the view of Kant is avowedly and absolutely un-experiential. Surely this makes the predominance of kinship manifest.

In Professor Max Müller's replies to my criticisms on Kant, I cannot see greater validity than in this affiliation to which I have demurred. One of his arguments is that which Dr. Hodgson has used, and which I have already answered; and I think that the others, when compared with the passages of the *Principles of Psychology* which they concern, will not be found adequate. I refer to them here chiefly for the purpose of pointing out that when he speaks of me as bringing "three arguments against Kant's view," he understates the number. Let me close what I have to say on this disputed question, by quoting the summary of reasons I have given for rejecting the Kantian hypothesis:—

"Kant tells us that Space is the form of all external intuition; which is not true. He tells us that the consciousness of Space continues when the consciousness of all things contained in it is suppressed; which is also not true. From these alleged facts he *infers* that Space is an *a priori* form of intuition. I say *infers*, because this conclusion is not presented in necessary union with the premises, in the same way that the consciousness of duality is necessarily presented along with the consciousness of inequality; but it is a conclusion voluntarily drawn for the purpose of explaining the alleged facts. And then that we may accept this conclusion, which is not necessarily presented along with these alleged facts which are not true, we are obliged to affirm several propositions which cannot be rendered into thought. When Space is itself contemplated, we have to conceive it as at once the form of intuition and the matter of intuition; which is impossible. We have to unite that which we are conscious of as Space with that which we are conscious of as the *ego*, and contemplate the one as a property of the other; which is

impossible. We have at the same time to disunite that which we are conscious of as Space, from that which we are conscious of as the *non-ego*, and contemplate the one as separate from the other; which is also impossible. Further, this hypothesis that Space is "nothing else" than a form of intuition belonging wholly to the *ego*, commits us to one of the two alternatives, that the *non-ego* is formless or that its form produces absolutely no effect upon the *ego*; both of which alternatives involve us in impossibilities of thought."—*Prin. of Psy.*, § 399.

Objections of another, though allied, class have been made in a review of the *Principles of Psychology* by Mr. H. Sidgwick—a critic whose remarks on questions of mental philosophy always deserve respectful consideration.

Mr. Sidgwick's chief aim is to show what he calls "the mazy inconsistency of his [my] metaphysical results." More specifically, he expresses thus the proposition he seeks to justify—"His view of the subject appears to have a fundamental incoherence, which shows itself in various ways on the surface of his exposition, but of which the root lies much deeper, in his inability to harmonise different lines of thought."

Before dealing with the reasons given for this judgment, let me say that, in addition to the value which candid criticisms have as showing where more explanation is needed, they are almost indispensable as revealing to a writer incongruities he had not perceived. Especially where, as in this case, the subject-matter has many aspects, and where the words supplied by our language are so inadequate in number that, to avoid cumbrous circumlocution, they have to be used in senses that vary according to the context, it is extremely difficult to avoid imperfections of statement. But while I acknowledge sundry such imperfections and the resulting incongrui-

ties, I cannot see that these are, as Mr. Sidgwick says, fundamental. Contrariwise, their superficiality seems to me proved by the fact that they may be rectified without otherwise altering the expositions in which they occur. Here is an instance.

Mr. Sidgwick points out that, when treating of the "Data of Psychology," I have said (in § 56) that, though we reach inferentially "the belief that mind and nervous action are the subjective and objective faces of the same thing, we remain utterly incapable of seeing, and even of imagining, how the two are related" (I quote the passage more fully than he does). He then goes on to show that in the "Special Synthesis," where I have sketched the evolution of Intelligence under its objective aspect, as displayed in the processes by which beings of various grades adjust themselves to surrounding actions, I "speak as if" we could see how consciousness "naturally arises at a particular stage" of nervous action. The chapter he here refers to is one describing that "differentiation of the psychical from the physical life" which accompanies advancing organization, and more especially advancing development of the nervous system. In it I have shown that, while the changes constituting physical life continue to be characterized by the *simultaneity* with which all kinds of them go on throughout the organism, the changes constituting psychical life, arising as the nervous system develops, become gradually more distinguished by their *seriality*. And I have said that as nervous integration advances, "there must result an unbroken series of these changes—there must arise a consciousness." Now I admit that here is an apparent inconsistency. I ought to have said that "there must result an unbroken series of these changes," which, taking place in the nervous system of a highly-organized

creature, gives coherence to its conduct; and along with which we assume a consciousness, because consciousness goes along with coherent conduct in ourselves. If Mr. Sidgwick will substitute this statement for the statement as it stands, he will see that the arguments and conclusions remain intact. A survey of the chapter as a whole, proves that its aim is not in the least to explain how nervous changes, considered as waves of molecular motion, become the feelings constituting consciousness; but that, contemplating the facts objectively in living creatures at large, it points out the cardinal distinction between vital actions in general, and those particular vital actions which, in a creature displaying them, lead us to speak of it as intelligent. It is shown that the rise of such actions becomes marked in proportion as the changes taking place in the part called the nervous system, are made more and more distinctly serial, by union in a supreme centre of co-ordination. The introduction of the word consciousness, arises in the effort to show what fundamental character there is in these particular physiological changes which is *parallel* to a fundamental character in the psychological changes.

Another instance of the way in which Mr. Sidgwick evolves an incongruity which he considers fundamental, out of what I should have thought he would see is a defective expression, I will give in his own words. Speaking of a certain view of mine, he says:—

“He tells us that ‘logic . . . contemplates in its propositions certain connexions predicated, which are necessarily involved with certain other connexions given: *regarding all these connexions as existing in the non-ego*—not, it may be, under the form in which we know them, but in some form.’ But in § 473, where Mr. Spencer illustrates by a diagram his ‘Transfigured Realism’, the view seems to be this: although we cannot say that the real non-ego resembles our notion of it in ‘its elements, relations, or laws,’ we can say that

'a change in the objective reality causes in the subjective state a change exactly answering to it—so answering as to *constitute a cognition of it.*' Here the 'something beyond consciousness' is no longer said to be unknown, as its effect in consciousness 'constitutes a cognition of it.' "

This apparent inconsistency, marked by the italics, would not have existed if, instead of "a cognition of it," I had said, as I ought to have said, "*what we call a cognition of it*"—that is, a relative cognition as distinguished from an absolute cognition. In ordinary language we speak of as cognitions, those connexions in thought which so guide us in our dealings with things, that actual experience verifies ideal anticipation: marking off, by opposed words, those connexions in thought which *mis*-guide us. The difference between accepting a cognition as relatively-true and accepting it as absolutely-true, will be clearly shown by an illustration. There is no direct resemblance whatever between the sizes, forms, colours, and arrangements, of the figures in an account-book, and the moneys or goods, debts or credits, represented by them; and yet the forms and arrangements of the written symbols, are such as answer in a perfectly-exact way to stocks of various commodities and to various kinds of transactions. Hence we say, figuratively, that the account-book will "tell us" all about these stocks and transactions. Similarly, the diagram Mr. Sidgwick refers to, suggests a way in which symbols, registered in us by objects, may have forms and arrangements wholly unlike their objective causes and the *nexus* among those causes, while yet they are so related as to guide us correctly in our transactions with those objective causes, and, *in that sense*, constitute cognitions of them; though they no more constitute cognitions in the absolute sense, than do the guiding symbols in the account-book constitute cognitions of the things to which they refer. So

repeatedly is this view implied throughout the *Principles of Psychology*, that I am surprised to find a laxity of expression raising the suspicion that I entertain any other.

To follow Mr. Sidgwick through sundry criticisms of like kind, which may be similarly met, would take more space than I can here afford. I must restrict myself now to the alleged "fundamental incoherence" of which he thinks these inconsistencies are signs. I refer to that reconciliation of Realism and Idealism considered by him as an impossible compromise. A difficulty is habitually felt in accepting a coalition after long conflict. Whoever has espoused one of two antagonist views, and, in defending it, has gained a certain comprehension of the opposite view, becomes accustomed to regard these as the only alternatives, and is puzzled by an hypothesis which is at once both and neither. Yet, since it turns out in nearly all cases that, of conflicting doctrines, each contains an element of truth, and that controversy ends by combination of their respective half-truths, there is *à priori* probability on the side of an hypothesis which qualifies Realism by Idealism.

Mr. Sidgwick expresses his astonishment, or rather bespeaks that of his readers, because, while I accept Idealistic criticisms, I nevertheless defend the fundamental intuition of Common Sense; and, as he puts it, "fires his [my] argument full in the face of Kant, Mill, and 'metaphysicians' generally."

"He tells us that 'metaphysicians' illegitimately assume that 'beliefs reached through complex intellectual processes,' are more valid than 'beliefs reached through simple intellectual processes;' that the common language they use refuses to express their hypotheses, and thus their reasoning inevitably implies the common notions which they repudiate; that the belief of Realism has the advantage of 'priority,' 'simplicity,' 'distinctness.' But surely

this prior, simple, distinctly affirmed belief is that of what Mr. Spencer terms 'crude Realism,' the belief that the non-ego is *per se* extended, solid, even coloured (if not resonant and odorous). This is what common language implies; and the argument by which Mr. Spencer proves the relativity of feelings and relations, still more the subtle and complicated analysis by which he resolves our notion of extension into an aggregate of feelings and transitions of feeling, lead us away from our original simple belief—that (*e.g.*) the green grass we see exists out of consciousness as we see it—just as much as the reasonings of Idealism, Scepticism, or Kantism."

On the face of it the anomaly seems great; but I should have thought that after reading the chapter on "Transfigured Realism," a critic of Mr. Sidgwick's acuteness would have seen the solution of it. He has overlooked an essential distinction. All which my argument implies is that the direct intuition of Realism must be held of superior authority to the arguments of Anti-Realism, *where their deliverances cannot be reconciled*. The one point on which their deliverances cannot be reconciled, is the existence of an objective reality. But while against this intuition of Realism I hold the arguments of Anti-Realism to be powerless, because they cannot be carried on without postulating that which they end by denying; yet, having admitted objective existence as a necessary postulate, it is possible to make valid criticisms upon all those judgments which Crude Realism joins with this primordial judgment: it is possible to show that a transfigured interpretation of properties and relations, is more tenable than the original interpretation.

To elucidate the matter, let us take the most familiar case in which the indirect judgments of Reason correct the direct judgments of Common Sense. The direct judgment of Common Sense is that the Sun moves round the Earth. In course of time, Reason, finding

some facts at variance with this, begins to doubt; and, eventually, hits upon an hypothesis which explains the anomalies, but which denies this apparently-certain *dictum* of Common Sense. What is the reconciliation? It consists in showing to Common Sense that the new interpretation equally well corresponds with direct intuition, while it avoids all the difficulties. Common Sense is reminded that the apparent motion of an object may be due either to its actual motion or to the motion of the observer; and that there are terrestrial experiences in which the observer thinks an object he looks at is moving, when the motion is in himself. Extending the conception thus given, Reason shows that if the Earth revolves on its axis, there will result that apparent motion of the Sun which Common Sense interpreted into an actual motion of the Sun; and the common-sense observer thereupon becomes able to think of sunrise and sunset as due to his position as spectator on a vast revolving globe. Now if the astronomer, setting out by recognizing these celestial appearances, and proceeding to evolve the various anomalies following from the common-sense interpretation of them, had drawn the conclusion that there externally exist no Sun and no motion at all, he would have done what Idealists do; and his arguments would have been equally powerless against the intuition of Common Sense. But he does nothing of the kind. He accepts the intuition of Common Sense respecting the reality of the Sun and of the motion; but replaces the old interpretation of the motion by a new interpretation reconcilable with all the facts.

Everyone must see that here, acceptance of the inexpugnable element in the common-sense judgment, by no means involves acceptance of the accompanying judgments; and I contend that the like discrimination must

be made in the case we are considering. It does not follow that while, against the consciousness which Crude Realism has of an objective reality, the arguments of Anti-Realism are futile, they are therefore futile against the conceptions which Crude Realism forms of the objective reality. If Anti-Realism can show that, granting an objective reality, the interpretation of Crude Realism contains insuperable difficulties, the process is quite legitimate. And, its primordial intuition remaining unshaken, Realism may, on reconsideration, be enabled to frame a new conception which harmonizes all the facts.

To show that there is not here the "mazy inconsistency" alleged, let us take the case of sound as interpreted by Crude Realism, and as re-interpreted by Transfigured Realism. Crude Realism assumes the sound present in consciousness to exist as such beyond consciousness. Anti-Realism proves the inadmissibility of this assumption in sundry ways (all of which, however, set out by talking of sounding bodies beyond consciousness, just as Realism talks of them); and then Anti-Realism concludes that we know of no existence save the sound as a mode of consciousness: which conclusion, and all kindred conclusions, I contend are vicious—first, because all the words used connote an objective activity; second, because the arguments are impossible without postulating at the outset an objective activity; and third, because no one of the intuitions out of which the arguments are built, is of equal validity with the single intuition of Realism that an objective activity exists. But now the Transfigured Realism which Mr. Sidgwick thinks "has all the serious incongruity of an intense metaphysical dream," neither affirms the untenable conception of Crude Realism, nor, like Anti-Realism, draws unthinkable conclusions by suicidal arguments; but,

accepting that which is essential in Crude Realism, and admitting the difficulties which Anti-Realism insists upon, reconciles matters by a re-interpretation analogous to that which an astronomer makes of the solar motion. Continuing all along to recognize an objective activity which Crude Realism calls sound, it shows that the answering sensation is produced by a succession of separate impacts which, if made slowly, may be separately identified, and which will, if progressively increased in rapidity, produce tones higher and higher in pitch. It shows by other experiments that sounding bodies are in states of vibration, and that the vibrations may be made visible. And it concludes that the objective activity is not what it subjectively seems, but is proximately interpretable as a succession of aërial waves. Thus Crude Realism is shown that while there unquestionably exists an objective activity corresponding to the sensation known as sound, yet the facts are not explicable on the original supposition that this is like the sensation; while they are explicable by conceiving it as a rhythmical mechanical action. Eventually this re-interpretation, joined with kindred re-interpretations of other sensations, comes to be itself further transfigured by analysis of its terms, and re-expression of them in terms of molecular motion; but, however abstract the interpretation ultimately reached, the objective activity continues to be postulated: the primordial judgment of Crude Realism remains unchanged, though it has to change the rest of its judgments.

In another part of his argument, however, Mr. Sidgwick implies that I have no right to use those conceptions of objective existence by which this compromise is effected. Quoting sundry passages to show that while I hold the criticisms of the Idealist to be impossible without "tacitly

or avowedly postulating an unknown something beyond consciousness," I yet admit that "our states of consciousness are the only things we can know;" he goes on to argue that I am radically inconsistent, because, in interpreting the phenomena of consciousness, I continually postulate, not an unknown something, but a something of which I speak in ordinary terms, as though its ascribed physical characters really exist as such, instead of being, as I admit they are, synthetic states of my consciousness. His objection, if I understand it, is that for the purposes of Objective Psychology I apparently profess to know Matter and Motion in the ordinary realistic way; while, as a result of subjective analysis, I reach the conclusion that it is impossible to have that knowledge of objective existence which Realism supposes we have. Doubtless there seems here to be what he calls "a fundamental incoherence." But I think it exists, not between my two expositions, but between the two consciousnesses of subjective and objective existence, which we cannot suppress and yet cannot put into definite forms. The alleged incoherence I take to be but another name for the inscrutability of the relation between subjective feeling and its objective correlate which is not feeling—an inscrutability which meets us at the bottom of all our analyses. An exposition of this inscrutability I have elsewhere summed up thus:—

"See, then, our predicament. We can think of Matter only in terms of Mind. We can think of Mind only in terms of Matter. When we have pushed our explorations of the first to the uttermost limit, we are referred to the second for a final answer; and when we have got the final answer of the second, we are referred back to the first for an interpretation of it. We find the value of x in terms of y ; then we find the value of y in terms of x ; and so on we may continue for ever without coming nearer to a solution."—*Prin. of Psy.* § 272.

Carrying a little further this simile, will, I think, show where lies the insuperable difficulty felt by Mr Sidgwick.

Taking x and y as the subjective and objective activities, unknown in their natures and known only as phenomenally manifested ; and recognizing the fact that every state of consciousness implies, immediately or remotely, the action of object on subject or subject on object, or both ; we may say that every state of consciousness will be symbolized by some modification of xy —the phenomenally-known product of the two unknown factors. In other words, xy' , $x'y$, $x'y'$, $x''y'$, $x'y''$, &c., &c., will represent all perceptions and thoughts. Suppose, now, that these are thoughts about the object ; composing some hypothesis respecting its characters as analyzed by physicists. Clearly, all such thoughts, be they about shapes, resistances, momenta, molecules, molecular motions, or what not, will contain forms of the subjective activity x . Now let the thoughts be concerning mental processes. It must similarly happen that some mode of the unknown objective activity y , will be in every case a component. Now suppose that the problem is the genesis of mental phenomena ; and that in the course of the inquiry, bodily organization and the functions of the nervous system are brought into the explanation. It will happen, as before, that these, considered as objective, have to be described and thought about in modes of xy . And when by the actions of such a nervous system, conceived objectively in modes of xy , and acted upon by physical forces which are conceived in other modes of xy , we endeavour to explain the genesis of sensations, perceptions, and ideas, which we can think of only in other modes of xy , we find that all our factors, and therefore all our interpretations, contain the two unknown terms, and that no interpretation is imaginable that will not contain the two unknown terms.

What is the defence for this apparently-circular process ? - Simply that it is a process of establishing

congruity among our symbols. It is finding a mode of so symbolizing the unknown activities, subjective and objective, and so operating with our symbols, that all our acts may be rightly guided—guided, that is, in such ways that we can anticipate, when, where, and in what quantity some one of our symbols, or some combination of our symbols, will be found. Mr. Sidgwick's difficulty arises, I think, from having insufficiently borne in mind the statements made at the outset, in "The Data of Philosophy," that such conceptions as "are vital, or cannot be separated from the rest without mental dissolution, must be assumed as true *provisionally*;" that "there is no mode of establishing the validity of any belief except that of showing its entire *congruity* with all other beliefs;" and that "Philosophy, compelled to make those fundamental assumptions without which thought is impossible, has to justify them by showing their *congruity* with all other dicta of consciousness." In pursuance of this distinctly-avowed mode of procedure, I assume provisionally, an objective activity and a subjective activity, and certain general forms and modes (Space, Time, Matter, Motion, Force,) which the subjective activity, operated on by the objective activity, ascribes to it, and which I suppose to correspond in some way to unknown forms and modes of the objective activity. These provisional assumptions, having been carried out to all their consequences, and these consequences proved to be congruous with one another and with the original assumptions, these original assumptions are justified. And if, finally, I assert, as I have repeatedly asserted, that the terms in which I express my assumptions and carry on my operations are but symbolic, and that all I have done is to show that by certain ways of symbolizing, perfect harmony results—

invariable agreement between the symbols in which I frame my expectations, and the symbols which occur in experience—I cannot be blamed for incoherence. On the contrary, it seems to me that my method is the most coherent that can be devised. Lastly, should it be said that this regarding of everything constituting experience and thought as symbolic, has a very shadowy aspect; I reply that these which I speak of as symbols, are real relatively to our consciousness; and are symbolic only in their relation to the Ultimate Reality.

That these explanations will make clear the coherence of views which before seemed “fundamentally incoherent,” I feel by no means certain; since, as I did not perceive the difficulties presented by the exposition as at first made, I may similarly fail to perceive the difficulties in this explanation. Originally, I had intended to complete the *Principles of Psychology* by a division showing how the results reached in the preceding divisions, physiological and psychological, analytic and synthetic, subjective and objective, harmonize with one another, and are but different aspects of the same aggregate of phenomena. But the work was already bulky; and I concluded that this division might be dispensed with, because the congruities to be pointed out were sufficiently obvious. So little was I conscious of the alleged “inability to harmonize different lines of thought.” Mr. Sidgwick’s perplexities, however, show me that such an exposition of concords is needful.

I have reserved to the last, one of the first objections made to the metaphysico-theological doctrine set forth in *First Principles*, and implied in the several volumes that have succeeded it. It was urged by an able metaphysician, the Rev. James Martineau, in an essay entitled

“Science, Nescience, and Faith;” and, effective against my argument as it stands, shows the need for some development of my argument. That Mr. Martineau’s criticism may be understood, I must quote the passages it concerns. Continuing the reasoning employed against Hamilton and Mansel, to show that our consciousness of that which transcends knowledge is *positive*, and not, as they allege, *negative*, I have said:—

“Still more manifest will this truth become when it is observed that our conception of the Relative itself disappears, if our conception of the Absolute is a pure negation. It is admitted, or rather it is contended, by the writers I have quoted above, that contradictions can be known only in relation to each other—that Equality, for instance, is unthinkable apart from its correlative Inequality; and that thus the Relative can itself be conceived only by opposition to the Non-relative. It is also admitted, or rather contended, that the consciousness of a relation implies a consciousness of both the related members. If we are required to conceive the relation between the Relative and Non-relative without being conscious of both, ‘we are in fact’ (to quote the words of Mr. Mansel differently applied) ‘required to compare that of which we are conscious with that of which we are not conscious; the comparison itself being an act of consciousness, and only possible through the consciousness of both its objects.’ What, then, becomes of the assertion that ‘the Absolute is conceived merely by a negation of conceivability,’ or as ‘the mere absence of the conditions under which consciousness is possible?’ If the Non-relative or Absolute, is present in thought only as a mere negation, then the relation between it and the Relative becomes unthinkable, because one of the terms of the relation is absent from consciousness. And if this relation is unthinkable, then is the Relative itself unthinkable, for want of its antithesis: whence results the disappearance of all thought whatever.”—*First Principles*, § 26.

On this argument Mr. Martineau comments as follows; first re-stating it in other words:—

“Take away its antithetic term, and the relative, thrown into isolation, is set up as absolute, and disappears from thought. It is indispensable therefore to uphold the Absolute in existence, as con-

dition of the relative sphere which constitutes our whole intellectual domain. Be it so: but, when saved on this plea,—to preserve the balance and interdependence of two *co*-relatives,—the ‘Absolute’ is absolute no more; it is reduced to a term of relation: it loses therefore its exile from thought: its disqualification is cancelled: and the alleged nescience is discharged.

“So, the same law of thought which warrants the existence, dissolves the inscrutableness, of the Absolute.”—*Essays, Philosophical and Theological*, pp. 186-7.

I admit this to be a telling rejoinder; and one which can be met only when the meanings of the words, as I have used them, are carefully discriminated, and the implications of the doctrine fully traced out. We will begin by clearing the ground of minor misconceptions.

First, let it be observed that though I have used the word Absolute as the equivalent of Non-relative, because it is used in the passages quoted from the writers I am contending against; yet I have myself chosen for the purposes of my argument, the name Non-relative, and I do not necessarily commit myself to any propositions respecting the Absolute, considered as that which includes both Subject and Object. The Non-relative as spoken of by me, is to be understood rather as the totality of Being *minus* that which constitutes the individual consciousness, present to us under forms of Relation. Did I use the word in some Hegelian sense, as comprehensive of that which thinks and that which is thought about, and did I propose to treat of the order of things, not as phenomenally manifested but as noumenally proceeding, the objection would be fatal. But the aim being simply to formulate the order of things as present under relative forms, the antithetical Non-relative here named as implied by the conception of the Relative, is that which, in any act of thought, is outside of and beyond it, rather than that which is inclusive of it. Further, it should be

observed that this Non-relative, spoken of as a necessary complement to the Relative, is not spoken of as a conception but as a *consciousness*; and I have in sundry passages distinguished between those modes of consciousness which, having limits, and constituting thought proper, are subject to the laws of thought, and the mode of consciousness which persists when the removal of limits is carried to the uttermost, and when distinct thought consequently ceases.

This opens the way to the reply here to be made to Mr. Martineau's criticism—namely, that while by the necessities of thought the Relative implies a Non-relative; and while, to think of this antithesis completely, requires that the Non-relative shall be made a conception proper; yet, for the vague thought which is alone in this case possible, it suffices that the Non-relative shall be present as a consciousness which though undefined is positive. Let us observe what necessarily happens when thought is employed on this ultimate question.

In a preceding part of the argument criticized, I have, in various ways, aimed to show that, alike when we analyze the product of thought and when we analyze the process of thought, we are brought to the conclusion that invariably “a thought involves *relation, difference, likeness* ;” and that even from the very nature of Life itself, we may evolve the conclusion that “thinking being relationing, no thought can ever express more than relations.” What, now, must happen if thought, having this law, occupies itself with the final mystery? Always implying terms in relation, thought implies that both terms shall be more or less defined; and as fast as one of them becomes indefinite, the relation also becomes indefinite, and thought becomes indistinct. Take the case of magnitudes. I think of an inch; I think of a

foot; and having tolerably-definite ideas of the two, I have a tolerably-definite idea of the relation between them. I substitute for the foot a mile; and being able to represent a mile much less definitely, I cannot so definitely think of the relation between an inch and a mile—cannot distinguish it in thought from the relation between an inch and two miles, as clearly as I can distinguish in thought the relation between an inch and one foot from the relation between an inch and two feet. And now if I endeavour to think of the relation between an inch and the 240,000 miles from here to the Moon, or the relation between an inch and the 92,000,000 miles from here to the Sun, I find that while these distances, practically inconceivable, have become little more than numbers to which I frame no answering ideas, so, too, has the relation between an inch and either of them become practically inconceivable. Now this partial failure in the process of forming thought-relations, which happens even with finite magnitudes when one of them is immense, passes into complete failure when one of them cannot be brought within any limits. The relation itself becomes unrepresentable at the same time that one of its terms becomes unrepresentable. Nevertheless, in this case it is to be observed that the almost-blank form of relation preserves a certain qualitative character. It is still distinguishable as belonging to the consciousness of extensions, not to the consciousnesses of forces or durations; and in so far remains a vaguely-identifiable relation. But now suppose we ask what happens when one term of the relation has not simply magnitude having no known limits, and duration of which neither beginning nor end is cognizable, but is also an existence not to be defined? In other words, what must happen if one term of the relation is

not only quantitatively but also qualitatively unrepresentable? Clearly in this case the relation does not simply cease to be thinkable except as a relation of a certain class, but it lapses completely. When one of the terms becomes wholly unknowable, the law of thought can no longer be conformed to; both because one term cannot be present, and because relation itself cannot be framed. That is to say, the law of thought that contradictories can be known only in relation to each other, no longer holds when thought attempts to transcend the Relative; and yet, when it attempts to transcend the Relative, it must make the attempt in conformity with its law—must in some dim mode of consciousness posit a Non-relative, and, in some similarly dim mode of consciousness, a relation between it and the Relative. In brief then, to Mr. Martineau's objection I reply, that the insoluble difficulties he indicates arise here, as elsewhere, when thought is applied to that which transcends the sphere of thought; and that just as when we try to pass beyond phenomenal manifestations to the Ultimate Reality manifested, we have to symbolize it out of such materials as the phenomenal manifestations give us; so we have simultaneously to symbolize the connexion between this Ultimate Reality and its manifestations, as somehow allied to the connexions among the phenomenal manifestations themselves. The truth Mr. Martineau's criticism adumbrates, is that the law of thought fails where the elements of thought fail; and this is a conclusion quite conformable to the general view I defend. Still holding the validity of my argument against Hamilton and Mansel, that in pursuance of their own principle the Relative is not at all thinkable *as such*, unless in contradistinction to some existence posited, however vaguely, as the other term of a relation, conceived however inde-

finitely; it is consistent on my part to hold that in this effort which thought inevitably makes to pass beyond its sphere, not only does the product of thought become a dim symbol of a product, but the process of thought becomes a dim symbol of a process; and hence any predicament inferable from the law of thought cannot be asserted.

I may fitly close this reply by a counter-criticism. To the direct defence of a proposition, may be added the indirect defence that results from showing the untenability of an alternative proposition. This criticism on the doctrine of an Unknowable Existence manifested to us in phenomena, Mr. Martineau makes in the interests of the doctrine held by him, that this existence is, to a considerable degree, knowable. We are quite at one in holding that there is an indestructible consciousness of Power behind Appearance; but whereas I contend that this Power cannot be brought within the forms of thought, Mr. Martineau contends that there can be consistently ascribed certain attributes of personality—not, indeed, human characteristics so concrete as were ascribed in past times; but still, human characteristics of the more abstract and higher class. His general doctrine is this:—Regarding Matter as independently existing; regarding as also independently existing, those primary qualities of Body “which are inseparable from the very idea of Body, and may be evolved *à priori* from the consideration of it as solid extension or extended solidity;” and saying that to this class “belong Triple Dimension, Divisibility, Incompressibility;” he goes on to assert that as these—“cannot absent themselves from Body, they have a reality coeval with it, and belong eternally to the material datum objective to God: and his mode of activity with regard to them must be similar to that which alone we can think of his directing upon the relations of Space, viz. not Volitional, to cause them, but Intellectual, to think them out.

The Secondary Qualities, on the other hand, having no logical tie to the Primary, but being appended to them as contingent facts, cannot be referred to any deductive thought, but remain over as products of pure Inventive Reason and Determining Will. This sphere of cognition, *a posteriori* to us,—where we cannot move a step alone but have submissively to wait upon experience, is precisely the realm of Divine originality: and we are most sequacious where He is most free. While on this Secondary field His Mind and ours are thus contrasted, they meet in resemblance again upon the Primary: for the evolutions of deductive Reason there is but one track possible to all intelligences; no *merum arbitrium* can interchange the false and true, or make more than one geometry, one scheme of pure Physics, for all worlds: and the Omnipotent Architect Himself, in realizing the Kosmical conception, in shaping the orbits out of immensity and determining seasons out of eternity, could but follow the laws of curvature, measure, and proportion.”—*Essays, Philosophical and Theological*, pp. 163-4.

Before the major criticism which I propose to make on this hypothesis, let me make a minor one. Not only of space-relations, but also of primary physical properties, Mr. Martineau asserts the necessity: not a necessity to our minds simply, but an ontological necessity. What is true for human thought, is, in respect of these, true absolutely: “the laws of curvature, measure, and proportion,” as we know them, are unchangeable even by Divine power; as are also the Divisibility and Incompressibility of Matter. But if, in these cases, Mr. Martineau holds that a necessity in thought implies an answering necessity in things, why does he refrain from saying the like in other cases? Why, if he tacitly asserts it in respect of space-relations and the statical attributes of Body, does he not also assert it in respect of the dynamical attributes of Body? The laws conformed to by that mode of force now distinguished as “energy,” are as much necessary to our thought as are the laws of space-relations. The axioms of Mechanics lie on the

same plane with the axioms of pure Mathematics. Now if Mr. Martineau admits this—if he admits, as he must, the corollary that there can be no such manifestation of energy as that displayed in the motion of a planet, save at the expense of equivalent energy which pre-existed—if he draws the further necessary corollary that the direction of a motion cannot be changed by any action, without an equal reaction in an opposite direction on something acting—if he bears in mind that this holds not only of all visible motions, celestial and terrestrial, but that those activities of Body which affect us as secondary properties, are also known only through other forms of energy, which are equivalents of mechanical energy and conform to these same laws—and if, lastly, he infers that none of these derivative energies can have given to them their characters and directions, save by pre-existing forces, statical and dynamical, conditioned in special ways; what becomes of that “realm of Divine originality” which Mr. Martineau describes as remaining within the realm of necessity? Consistently carried out, his argument implies a universally-inevitable order, in which volition can have no such place as that he alleges.

Not pushing Mr. Martineau’s reasoning to this conclusion, so entirely at variance with the one he draws, but accepting his statement just as it stands, let us consider the solution it offers us. We are left by it without any explanation of Space and Time; we are not helped in conceiving the origin of Matter; and there is afforded us no idea how Matter came to have its primary attributes. All these are tacitly assumed to exist uncreated. Creative activity is represented as under the restrictions imposed by mathematical necessities, and as having for *datum* (mark the word) a substance which, in respect of certain characters, defies modification. But surely this is

not an interpretation of the mystery of things. The mystery is simply relegated to a remoter region, respecting which no inquiry is to be made. But the inquiry *must* be made. After every such solution there arises afresh the question—what is the origin and nature of that which imposes these limits on creative power? what is the primary God which dominates over this secondary God? For, clearly, if the “Omnipotent Architect himself” (to use Mr. Martineau’s somewhat inconsistent name) is powerless to change the “material datum objective” to him, and powerless to change the conditions under which it exists, and under which he works, there is obviously implied a power to which he is subject. So that in Mr. Martineau’s doctrine also, there is an Ultimate Unknowable; and it differs from the doctrine he opposes, only by intercalating a partially Knowable between this and the wholly Knowable.

Finding, as explained above, that this interpretation is not consistent with itself; and finding, as just shown, that it leaves the essential mystery unsolved; I do not see that it has an advantage over the doctrine of the Unknowable in its unqualified shape. There cannot, I think, be more than temporary rest in a proximate solution which takes for its basis the ultimately insoluble. Just as thought cannot be prevented from passing beyond Appearance, and trying to conceive the Cause behind; so, following out the interpretation Mr. Martineau offers, thought cannot be prevented from asking what Cause it is which restricts the Cause he assigns. And if we *must* admit that the question under this eventual form cannot be answered, may we not as well confess that the question under its immediate form cannot be answered? Is it not better candidly to acknowledge the incompetence of our intelligence, rather than to persist in calling that

an explanation which does but disguise the inexplicable? Whatever answer each may give to this question, he cannot rightly blame those who, finding in themselves an indestructible consciousness of an ultimate Cause, whence proceed alike what we call the Material Universe and what we call Mind, refrain from affirming anything respecting it; because they find it as inscrutable in nature as it is inconceivable in extent and duration.

POSTSCRIPT.—With the concluding paragraph of the foregoing article, I had hoped to end, for a long time, all controversial writing; and, if the article had been published entire in the November number of the *Fortnightly*, as originally intended, the need for any addition would not have been pressing. But while it was in the printer's hands, two criticisms, more elaborate than those dealt with above, made their appearance; and now that the postponed publication of this latter half of the article affords the opportunity, I cannot, without risking misinterpretations, leave these criticisms unnoticed.

Especially do I feel called upon by courtesy to make some response to one who, in the *Quarterly Review* for October, has dealt with me in a spirit which, though largely antagonistic, is not wholly unsympathetic; and who manifestly aims to estimate justly the views he opposes. In the space at my disposal, I cannot of course follow him through all the objections he has urged. I must content myself with brief comments on the two propositions he undertakes to establish. His enunciation of these runs thus :—

"We would especially direct attention to two points, to both of which we are confident objections may be made; and although Mr. Spencer has himself doubtless considered such objections (and they

may well have struck many of his readers also), we nevertheless do not observe that he has anywhere noticed or provided for them.

"The two points we so select are:—

"(1) *That his system involves the denial of all truth.*

"(2) *That it is radically and necessarily opposed to all sound principles of morals.*"

On this passage, ending in these two startling assertions, let me first remark that I am wholly without this consciousness the reviewer ascribes to me. Remembering that I have expended some little labour in developing what I conceive to be a system of truths, I am surprised by the supposition that "the denial of all truth" is an implication which I am "doubtless" aware may be alleged against this system. Remembering, too, that by its programme this system is shown to close with two volumes on *The Principles of Morality*, the statement that it is "necessarily opposed to all sound principles of morals," naturally astonishes me; and still more the statement that I am doubtless conscious it may be so regarded. Saying thus much by way of repudiating that latent scepticism attributed to me by the reviewer, I proceed to consider what he says in proof of these propositions.

On those seeming incongruities of Transfigured Realism commented on by him, I need say no more than I have already said in reply to Mr. Sidgwick; by whom also they have been alleged. I will limit myself to the corollary he draws from the doctrine of the Relativity of Knowledge, as held by me. Rightly pointing out that I hold this in common with "Messrs. Mill, Lewes, Bain, and Huxley;" but not adding, as he should have done, that I hold it in common with Hamilton, Mansel, and the long list of predecessors through whom Hamilton traced it; the reviewer proceeds to infer from this doctrine of relativity that no absolute truth of any kind can be asserted—

not even the absolute truth of the doctrine of relativity itself. And then he leaves it to be supposed by his readers, that this inference tells especially against the system he is criticizing. If, however, the reviewer's inference is valid, this "denial of all truth" must be charged against the doctrines of thinkers called orthodox, as well as against the doctrines of those many philosophers, from Aristotle down to Kant, who have said the same thing. But now I go further, and reply that against that form of the doctrine of relativity held by me, this allegation cannot be made with the same effect as it can against preceding forms of the doctrine. For I diverge from other relativists in asserting that the existence of a non-relative is not only a positive deliverance of consciousness, but a deliverance transcending in certainty all others whatever; and is one without which the doctrine of relativity cannot be framed in thought. I have urged that "unless a real Non-relative or Absolute be postulated, the Relative itself becomes absolute; and so brings the argument to a contradiction;"* and elsewhere I have described this consciousness of a Non-relative manifested to us through the Relative as "deeper than demonstration—deeper even than definite cognition—deep as the very nature of mind;"† which seems to me to be saying as emphatically as possible that, while all other truths may be held as relative, this truth must be held as absolute. Yet, strangely enough, though contending thus against the pure relativists, and holding with the reviewer, that "every asserter of such a [purely-relative] philosophy must be in the position of a man who saws across the branch of a tree on which he actually sits, at a point between himself and the trunk,"‡ I am

* *First Principles*, § 26.

† *Ibid.*, § 62.

‡ Compare *Principles of Psychology*, §§ 88, 95, 391, 401, 406.

singled out by him as though this were my own predication! So far, then, from admitting that the view I hold “involves the denial of all truth,” I assert that, having at the outset posited the co-existence of subject and object as a deliverance of consciousness which precedes all reasoning;* having subsequently shown, analytically, that this postulate is in every way verified,† and that in its absence the proof of relativity is impossible; my view is distinguished by an exactly-opposite trait.

The justification of his second proposition the reviewer commences by saying that—“In the first place the process of Evolution, as understood by Mr. Spencer, compels him to be at one with Mr. Darwin in his denial of the existence of any fundamental and essential distinction between Duty and Pleasure.” Following this by a statement respecting the genesis of moral sentiments as understood by me (which is extremely unlike the one I have given in the *Principles of Psychology*, § 215, §§ 503-512, and §§ 524-532), the reviewer goes on to say that “We yield with much reluctance to the necessity of affirming that Mr. Spencer gives no evidence of ever having acquired a knowledge of the meaning of the term ‘morality,’ according to the true sense of the word.”

Just noting that, as shown by the context, the assertion thus made is made against all those who hold the Doctrine of Evolution in its unqualified form, I reply that in so far as it concerns me, it is one the reviewer would scarcely have made had he more carefully examined the evidence: not limiting himself to those works of mine named at the head of his article. And I cannot but think that had the spirit of fairness which he evidently strives to maintain, been fully awake when these

* *First Principles*, §§ 39—45. † *Principles of Psychology*, part vii.

passages were written, he would have seen that, before making so serious an allegation, wider inquiry was needful. If he had simply said that, given the doctrine of mental evolution as held by me, he failed to see how moral principles are to be established, I should not have objected; provided he had also said that I believe they can be established, and had pointed out what I hold to be their bases. As it is, however, he has so presented his own inference from my premises, as to make it seem an inference which I also must draw from my premises. Quite a different and much more secure foundation for moral principles is alleged by me, than that afforded by moral sentiments and conceptions; which he refers to as though they formed the sole basis of the ethical conclusions I hold. While the reviewer contends that "Mr. Spencer's moral system is even yet more profoundly defective, as it denies any objective distinction between right and wrong in any being, whether men are or are not responsible for their actions;" I contend, contrariwise, that it is distinguished from other moral systems by asserting the objectivity of the distinction, and by endeavouring to show that the subjective distinction is derived from the objective distinction. In my first work, *Social Statics*, published twenty-three years ago, the essential thesis is that, apart from their warrant as alleged Divine injunctions, and apart from their authority as moral intuitions, the principles of justice are primarily deducible from the laws of life, as carried on under social conditions. I argued throughout that these principles so derived have a supreme authority, to which considerations of immediate expediency must yield; and I was for this reason classed by Mr. Mill as an anti-utilitarian. More recently, in a letter drawn from me by this misapprehension of Mr. Mill, and afterwards published by Professor

Bain in his *Mental and Moral Science*, I have re-stated this position. Already, in an explanatory article entitled *Morals and Moral Sentiments*, published in this Review for April, 1871, I have quoted passages from that letter ; and here, considering the gravity of the assertions made by the *Quarterly* reviewer, I hope to be excused for re-quoting them :—

“Morality, properly so called—the science of right conduct—has for its object to determine *how* and *why* certain modes of conduct are detrimental, and certain other modes beneficial. These good and bad results cannot be accidental, but must be necessary consequences of the constitution of things ; and I conceive it to be the business of Moral Science to deduce from the laws of life and the conditions of existence, what kinds of action necessarily tend to produce happiness, and what kinds to produce unhappiness. Having done this, its deductions are to be recognized as laws of conduct ; and are to be conformed to irrespective of a direct estimation of happiness or misery.”

* * * * *

“If it is true that pure rectitude-prescribes a system of things far too good for men as they are, it is not less true that mere expediency does not of itself tend to establish a system of things any better than that which exists. While absolute morality owes to expediency the checks which prevent it from rushing into Utopian absurdities, expediency is indebted to absolute morality for all stimulus to improvement. Granted that we are chiefly interested in ascertaining what is *relatively right*, it still follows that we must first consider what is *absolutely right* ; since the one conception presupposes the other.”

And the comment I then made on these passages I may make now, that “I do not see how there could well be a more emphatic assertion that there exists a primary basis of morals independent of, and in a sense antecedent to, that which is furnished by experiences of utility ; and consequently independent of, and in a sense antecedent to, those moral sentiments which I conceive to be generated by such experiences.” I will only add that, had my beliefs been directly opposite to those I have enun-

ciated, the reviewer might, I think, have found good reasons for his assertion. If, instead of demurring to the doctrine "that greatest happiness should be the *immediate* aim of man,"* I had endorsed that doctrine—if, instead of explaining and justifying "a belief in the special sacredness of these highest principles, and a sense of the supreme authority of the altruistic sentiments answering to them,"† I had denied the sacredness and the supreme authority—if, instead of saying of the wise man that "the highest truth he sees he will fearlessly utter; knowing that, let what may come of it, he is thus playing his right part in the world,"‡ I had said that the wise man will *not* do this; the reviewer might with truth have described me as not understanding "the term 'morality' according to the true sense of the word." And he might then have inferred that the Doctrine of Evolution as I hold it, implies denial of the "distinction between Duty and Pleasure." But as it is, I think the evidence will not generally be held to warrant his assertion.

I quite agree with the reviewer that the prevalence of a philosophy "is no mere question of speculative interest, but is one of the highest practical importance." I join him, too, in the belief that "calamitous social and political changes" may be the outcome of a mistaken philosophy. Moreover, writing as he does under the conviction that there can be no standard of right and wrong save one derived from a Revelation interpreted by an Infallible Authority, I can conceive the alarm with which he regards so radically-opposed a system. Though I could have wished that the sense of justice he generally displays had prevented him from ignoring the evidence I have above given, I can understand how, from his

* *Social Statics*, chap. iii. † *Principles of Psychology*, § 531.

‡ *First Principles*, § 34.

point of view, the Doctrine of Evolution, as I understand it, "seems absolutely fatal to every germ of morality," and "entirely negatives every form of religion." But I am unable to understand that modified Doctrine of Evolution which the reviewer hints at as an alternative. For, little as the reader would anticipate it after these expressions of profound dissent, the reviewer displays such an amount of agreement as to suggest that the system he is criticizing might be converted, "rapidly and without violence, into an 'allotropic state,' in which its conspicuous characters would be startlingly diverse from those that it exhibits at present." May I, using a different figure, suggest a different transformation, having a subjective instead of an objective character? As in a stereoscope, the two views representing diverse aspects, often yield at first a jumble of conflicting impressions, but after a time suddenly combine into a single whole which stands out quite clearly; so, may it not be that the seemingly-inconsistent Idealism and Realism dwelt on by the reviewer, as well as the other seemingly-fundamental incongruities he is struck by, will, under more persistent contemplation, unite as complementary sides of the same thing?

My excuse for devoting some space to a criticism of so entirely different a kind as that contained in the *British Quarterly Review* for October, must be that, under the circumstances, I cannot let it pass unnoticed without seeming to admit its validity.

Saying that my books should be dealt with by specialists, and tacitly announcing himself as an expert in Physics, the reviewer takes me to task both for errors in the statement of physical principles and for erroneous reasoning in physics. That he discovers no mistakes I

do not say. It would be marvellous if in such a multitude of propositions, averaging a dozen per page, I had made all criticism-proof. Some are inadvertencies which I should have been obliged to the reviewer for pointing out as such, but which he prefers to instance as proving my ignorance. In other cases, taking advantage of an imperfection of statement, he proceeds to instruct me about matters which either the context, or passages in the same volume, show to be quite familiar to me. Here is a sample of his criticisms belonging to this class :—

“Nor should we counsel a man to venture upon physical speculations who converts the proposition ‘*heat is insensible motion*’ into ‘*insensible motion is heat*,’ and hence concludes that when a force is applied to a mass so large that no motion is seen to result from it, or when, as in the case of sound, motion gets so dispersed that it becomes insensible, it turns to heat.”

Respecting the first of the two statements contained in this sentence, I will observe that the reader, if not misled by the quotation-marks into the supposition that I have made, in so many words, the assertion that “insensible motion is heat,” will at any rate infer that this assertion is distinctly involved in the passage named. And he will infer that the reviewer would never have charged me with such an absurd belief, if there was before him evidence proving that I have no such belief. What will the reader say, then, when he learns, not simply that there is no such statement, and not simply that on the page referred to, which I have ascertained to be the one intended, there is no such implication visible, even to an expert (and I have put the question to one); but when he further learns that in other passages, the fact that heat is one only of the modes of insensible motion is distinctly stated (see *First Prin.* §§ 66, 68, 171); and when he learns that elsewhere I have specified the several forms of insensible motion? If the re-

viewer, who looks so diligently for flaws as to search an essay in a volume he is not reviewing to find one term of an incongruity, had sought with equal diligence to learn what I thought about insensible motion, he would have found in the *Classification of the Sciences*, Table II., that insensible motion is described by me as having the forms of Heat, Light, Electricity, Magnetism. Even had there been in the place he names, an unquestionable implication of the belief which he ascribes to me, fairness might have led him to regard it as an oversight when he found it at variance with statements I have elsewhere made. What then is to be thought of him when, in the place named, no such belief is manifest; either to an ordinary reader or to a specially-instructed reader?

No less significant is the state of mind betrayed in the second clause of the reviewer's sentence. By representing me as saying that when the motion constituting sound "gets so dispersed that it becomes insensible, it turns to heat," does he intend to represent me as thinking that when sound-undulations become too weak to be audible, they become heat-undulations? If so, I reply that the passage he refers to has no such meaning. Does he then allege that some part of the force diffused in sound-waves is expended in generating electricity, by the friction of heterogeneous substances (which, however, eventually lapses from this special form of molecular motion in that general form constituting heat); and that I ought to have thus qualified my statement? If so, he would have had me commit a piece of scientific pedantry hindering the argument. If he does not mean either of these things, what does he mean? Does he contest the truth of the hypothesis which enabled Laplace to correct Newton's estimate of the velocity of sound—the hypothesis that heat is evolved by the com-

pression each sound-wave produces in the air? Does he deny that the heat so generated is at the expense of so much wave-motion lost? Does he question the inference that some of the motion embodied in each wave is from instant to instant dissipated, partly in this way and partly in the heat evolved by fluid friction? Can he show any reason for doubting that when the sound-waves have become too feeble to affect our senses, their motion still continues to undergo this transformation and diminution until it is all lost? If not, why does he implicitly deny that the molar motion constituting sound, eventually disappears in producing the molecular motion constituting heat? *

I will dwell no longer on the exclusively-personal questions raised by the reviewer's statements; but, leaving the reader to judge of the rest of my "stupendous mistakes" by the one I have dealt with, I will turn to a

* Only after the foregoing paragraphs were written, did the remark of a distinguished friend show me how certain words were misconstrued by the reviewer in a way that had never occurred to me as possible. In the passage referred to, I have said that sound-waves "finally die away in generating thermal undulations that radiate into space;" meaning, of course, that the force embodied in the sound-waves is finally *exhausted* in generating thermal undulations. In common speech, the dying-away of a prolonged sound, as that of a church-bell, includes its gradual diminution as well as its final cessation. But rather than suppose I gave to the words this ordinary meaning, the reviewer supposes me to believe, not simply that the *longitudinal* waves of air can pass, *without discontinuity*, into the *transverse* waves of ether, but he also debits me with the belief that the one order of waves, having lengths measurable in feet, and rates expressed in hundreds per second, can, *by mere enfeeblement*, pass into the other order of waves, having lengths of some fifty thousand to the inch, and rates expressed in many billions per second! Why he preferred so to interpret my words, and that, too, in the face of contrary implications elsewhere (instance § 100), will, however, be manifest to every one who reads his criticisms.

question worthy to occupy some space, as having an impersonal interest—the question, namely, respecting the nature of the warrant we have for asserting ultimate physical truths. The contempt which, as a physicist, the reviewer expresses for the metaphysical exploration of physical ideas, I will pass over with the remark that every physical question, probed to the bottom, opens into a metaphysical one; and that I should have thought the controversy now going on among chemists, respecting the legitimacy of the atomic hypothesis, might have shown him as much. On his erroneous statement that I use the phrase “Persistence of Force” as an equivalent for the now-generally-accepted phrase “Conservation of Energy,” I will observe only that, had he not been in so great a hurry to find inconsistencies, he would have seen why, for the purposes of my argument, I intentionally use the word Force: Force being the generic word, including both that species known as Energy, and that species by which Matter occupies space and maintains its integrity—a species which, whatever may be its relation to Energy, and however clearly recognized as a necessary *datum* by the theory of Energy, is not otherwise considered in that theory. I will confine myself to the proposition, disputed at great length by the reviewer, that our cognition of the Persistence of Force is *à priori*. He relies much on the authority of Professor Tait, whom he twice quotes to the effect that—

“Natural philosophy is an experimental, and not an intuitive science. No *à priori* reasoning can conduct us demonstratively to a single physical truth.”

Were I to take a hypercritical attitude, I might dwell on the fact that Professor Tait leaves the extent of his proposition somewhat doubtful, by speaking of “Natural philosophy” as *one* science. Were I to follow further

the reviewer's example, I might point out that "Natural philosophy," in that Newtonian acceptation adopted by Professor Tait, includes Astronomy; and, going on to ask what astronomical "experiments" those are which conduct us to astronomical truths, I might then "counsel" the reviewer not to depend on the authority of one who (to use the reviewer's polite language) "blunders" by confounding experiment and observation. I will not, however, thus infer from Professor Tait's imperfection of statement that he is unaware of the difference between the two; and shall rate his authority as of no less value than I should, had he been more accurate in his expression. Respecting that authority I shall simply remark that, if the question had to be settled by the authority of any physicist, the authority of Mayer, who is diametrically opposed to Prof. Tait on this point, and who has been specially honoured, both by the Royal Society and by the French Institute, might well counterweigh his, if not out-weigh it. I am not aware, however, that the question is one in Physics. It seems to me a question respecting the nature of proof. And, without doubting Professor Tait's competence in Logic and Psychology, I should decline to abide by his judgment on such a question, even were there no opposite judgment given by a physicist, certainly of not less eminence.

Authority aside, however, let us discuss the matter on its merits. In the *Treatise on Natural Philosophy*, by Professors Thomson and Tait, § 243, I read that "as we shall show in our chapter on 'Experience,' physical axioms are axiomatic to those only who have sufficient knowledge of the action of physical causes to enable them to see at once their necessary truth." In this I agree entirely. It is in Physics, as it is in Mathematics, that before necessary truths can be grasped, there must

be gained by individual experience, such familiarity with the elements of the thoughts to be framed, that propositions about those elements may be mentally represented with distinctness. Tell a child that things which are equal to the same thing are equal to one another, and the child, lacking a sufficiently-abstract notion of equality, and lacking, too, the needful practice in comparing relations, will fail to grasp the axiom. Similarly, a rustic, never having thought much about forces and their results, cannot form a definite conception answering to the axiom that action and reaction are equal and opposite. In the last case as in the first, ideas of the terms and their relations require to be made, by practice in thinking, so vivid that the involved truths may be mentally seen. But when the individual experiences have been multiplied enough to produce distinctness in the representations of the elements dealt with; then, in the one case as in the other, those mental forms generated by ancestral experiences, cannot be occupied by the elements of one of these ultimate truths without perception of its necessity. If Professor Tait does not admit this, what does he mean by speaking of "physical axioms," and by saying that the cultured are enabled "to see *at once* their *necessary* truth?"

Again, if there are no physical truths which must be classed as *à priori*, I ask why Professor Tait joins Sir W. Thomson in accepting as bases for Physics, Newton's Laws of Motion? Though Newton gives illustrations of prolonged motion in bodies that are little resisted, he gives no *proof* that a body in motion will continue moving, if uninterfered with, in the same direction at the same velocity; nor, on turning to the enunciation of this law quoted in the above-named work, do I find that Professor Tait does more than exemplify it by facts

which can themselves be asserted only by taking the law for granted. Does Professor Tait deny that the first law of motion is a physical truth? If so, what does he call it? Does he admit it to be a physical truth, and, denying that it is *à priori*, assert that it is established *à posteriori*—that is, by conscious induction from observation and experiment? If so, what is the inductive reasoning which can establish it? Let us glance at the several conceivable arguments which we must suppose him to rely on.

A body set in motion soon ceases to move if it encounters much friction, or much resistance from the bodies struck. If less of its energy is expended in moving, or otherwise affecting, other bodies, or in overcoming friction, its motion continues longer. And it continues longest when, as over smooth ice, it meets with the smallest amount of obstruction. May we then, proceeding by the method of concomitant variations, infer that were it wholly unobstructed its motion would continue undiminished? If so, we assume that the diminution of its motion observed in experience, is proportionate to the amount of energy abstracted from it in producing other motion, either molar or molecular. We assume that no variation has taken place in its rate, save that caused by deductions in moving other matter; for if its motion be supposed to have otherwise varied, the conclusion that the differences in the distances travelled result from differences in the obstructions met with, is vitiated. Thus the truth to be established is already taken for granted in the premises. Nor is the question begged in this way only. In every case where it is remarked that a body stops the sooner, the more it is obstructed by other bodies or media, the law of inertia is assumed to

hold in the obstructing bodies or media. The very conception of greater or less retardation so caused, implies the belief that there can be no retardations without proportionate retarding causes ; which is itself the assumption otherwise expressed in the first law of motion.

Again, let us suppose that instead of inexact observations made on the movements occurring in daily experience, we make exact experiments on movements specially arranged to yield measured results ; what is the postulate underlying every experiment ? Uniform velocity is defined as motion through equal spaces in equal times. How do we measure equal times ? By an instrument which can be inferred to mark equal times only if the oscillations of the pendulum are isochronous ; which they can be proved to be only if the first and second laws of motion are granted. That is to say, the proposed experimental proof of the first law, assumes not only the truth of the first law, but of that which Professor Tait agrees with Newton in regarding as a second law. Is it said that the ultimate time-measure referred to is the motion of the Earth round its axis, through equal angles in equal times ? Then the obvious rejoinder is that the assertion of this, similarly involves an assertion of the truth to be proved ; since the undiminished rotatory movement of the Earth is itself a corollary from the first law of motion. Is it alleged that this axial movement of the Earth through equal angles in equal times, is ascertainable by reference to the stars ? I answer that a developed system of Astronomy, leading through complex reasonings to the conclusion that the Earth rotates, is, in that case, supposed to be needful before there can be established a law of motion which this system of Astronomy itself postulates. For even should it be said that the Newtonian theory of the Solar System is not neces-

sarily pre-supposed, but only the Copernican ; still, the proof of this assumes that a body at rest (a star being taken as such) will continue at rest ; which is a part of the first law of motion, regarded by Newton as not more self-evident than the remaining part.

Not a little remarkable, indeed, is the oversight made by Professor Tait, in asserting that “ no *à priori* reasoning can conduct us demonstratively to a single physical truth,” when he has before him the fact that the system of physical truths constituting Newton’s *Principia*, which he has joined Sir William Thomson in editing, is established by *à priori* reasoning. That there can be no change without a cause, or, in the words of Mayer, that “ a force cannot become nothing, and just as little can a force be produced from nothing,” is that ultimate dictum of consciousness on which all physical science rests. It is involved alike in the assertion that a body at rest will continue at rest, in the assertion that a body in motion must continue to move at the same velocity in the same line if no force acts on it, and in the assertion that any divergent motion given to it must be proportionate to the deflecting force ; and it is also involved in the axiom that action and reaction are equal and opposite.

The reviewer’s doctrine, in support of which he cites against me the authority of Professor Tait, illustrates in Physics that same error of the inductive philosophy, which, in Metaphysics, I have pointed out elsewhere (*Principles of Psychology*, Part VII.). It is a doctrine implying that we can go on for ever asking the proof of the proof, without finally coming to any deepest cognition which is unproved and unprovable. That this is an untenable doctrine, I need not say more to show. Nor, indeed, would saying more to show it be likely to have any effect, in so far at least as the reviewer is concerned ;

seeing that he thinks I am "ignorant of the very nature of the principles" of which I am speaking, and seeing that my notions of scientific reasoning "remind" him "of the Ptolemists," who argued that the heavenly bodies must move in circles because the circle is the most perfect figure.*

Not to try the reader's patience further, I will end by pointing out that, even were the reviewer's criticisms all valid, they would leave unshaken the theory he contends against. Though one of his sentences (p. 480) raises the expectation that he is about to assault, and greatly to damage, the bases of the system contained in the second part of *First Principles*, yet all those propositions which constitute the bases, he leaves, not only uninjured, but even untouched,—contenting himself with trying to show (with what success we have seen) that the fundamental one is an *à posteriori* truth and not an *à priori* truth. Against the general Doctrine of Evolution, considered as an induction from all classes of concrete

* Other examples of these amenities of controversy, in which I decline to imitate my reviewer, have already been given. What occasions he supplies me for imitation, were I minded to take advantage of them, an instance will show. Pointing out an implication of certain reasonings of mine, he suggests that it is too absurd even for me to avow explicitly; saying:—"We scarcely think that even Mr. Spencer will venture to claim as a datum of consciousness the Second Law of Motion, with its attendant complexities of component velocities, &c." Now any one who turns to Newton's *Principia*, will find that to the enunciation of the Second Law of Motion, nothing whatever is appended but an amplified re-statement—there is not even an illustration, much less a proof. And from this law, this axiom, this immediate intuition or "datum of consciousness," Newton proceeds forthwith to draw those corollaries respecting the composition of forces which underlie all dynamics. What, then, must be thought of Newton, who explicitly assumes that which the reviewer thinks it absurd to assume implicitly?

phenomena, he utters not a word; nor does he utter a word to disprove any one of those laws of the redistribution of matter and motion, by which the process of Evolution is deductively interpreted. Respecting the law of the Instability of the Homogeneous, he says no more than to quarrel with one of the illustrations. He makes no criticism on the law of the Multiplication of Effects. The law of Segregation he does not even mention. Nor does he mention the law of Equilibration. Further, he urges nothing against the statement that these general laws are severally deducible from the ultimate law of the Persistence of Force. Lastly, he does not deny the Persistence of Force; but only differs respecting the nature of our warrant for asserting it. Beyond pointing out, here a cracked brick and there a coin set askew, he merely makes a futile attempt to show that the foundation is not natural rock, but concrete.

From his objections I may, indeed, derive much satisfaction. That a competent critic, obviously anxious to do all the mischief he can, and not over-scrupulous about the means he uses, has done so little, may be taken as evidence that the fabric of conclusions attacked will not be readily overthrown.

In the *British Quarterly Review* for January, 1874, the writer of the article I have dealt with above, makes a rejoinder. It is of the kind which might have been anticipated. There are men to whom the discovery that they have done injustice is painful. After proof of having wrongly ascribed to another such a nonsensical belief as that insensible motion is heat because heat is insensible motion, some would express regret. Not so my reviewer. Having by forced interpretations debited

me with an absurdity, he makes no apology; but, with an air implying that he had all along done this, he attacks the allegation I had really made—an allegation which is at least so far from an absurdity, that he describes it only as not justified by “the present state of science.” And here, having incidentally referred to this point, I may as well, before proceeding, deal with his substituted charge at the same time that I further exemplify his method. Probably most of those who see the *British Quarterly*, will be favourably impressed by the confidence of his assertion; but those who compare my statement with his travesty of it, and who compare both with some authoritative exposition, will be otherwise impressed. To his statement that I conclude “that friction must ultimately transform *all* [the italics are his] the energy of a sound into heat,” I reply that it is glaringly untrue: I have named friction as a second cause. And when he pooh-poohs the effect of compression because it is “merely momentary,” is he aware of the meaning of his words? Will he deny that, from first to last, during the interval of condensation, heat is being generated? Will he deny to the air the power of radiating such heat? He will not venture to do so. Take then the interval of condensation as one-thousandth of a second. I ask him to inform those whom he professes to instruct, what is the probable number of heat-waves which have escaped in this interval. Must they not be numbered by thousands of millions? In fact, by his “merely momentary,” he actually assumes that what is momentary in relation to our time-measures, is momentary in relation to the escape of ethereal undulations!

Let me now proceed more systematically, and examine his rejoinder point by point. It sets out thus:—

“In the notice of Mr. Spencer's works that appeared in the last

number of this *Review*, we had occasion to point out that he held mistaken notions of the most fundamental generalizations of dynamics; that he had shown an ignorance of the nature of proof in his treatment of the Newtonian Law; that he had used phrases such as the Persistence of Force in various and inconsistent significations; and more especially that he had put forth proofs logically faulty in his endeavour to demonstrate certain physical propositions by *a priori* methods, and to show that such proofs must exist. To this article Mr. Spencer has replied in the December number of the *Fortnightly Review*. His reply leaves every one of the above positions unassailed."

In my "Replies to Criticisms," which, as it was, trespassed unduly on the pages of the *Fortnightly Review*, I singled out from his allegations which touched me personally, one that might be briefly dealt with as an example; and I stated that, passing over other personal questions, as not interesting to the general reader, I should devote the small space available to an impersonal one. Notwithstanding this, the reviewer, in the foregoing paragraph, enumerates his chief positions; asserts that I have not assailed any of them (which is untrue); and then leads his readers to the belief that I have not assailed them because they are unassailable.

Leaving this misbelief to be dealt with presently, I continue my comments on his rejoinder. After referring to the passage I have quoted from Prof. Tait's statement about physical axioms, and after indicating the nature of my criticism, the reviewer says:—

"Had Mr. Spencer, however, read the sentence that follows it, we doubt whether we should have heard aught of this quotation. It is 'Without further remark we shall give Newton's Three Laws; it being remembered that as the properties of matter might have been such as to render a totally different set of laws axiomatic, *these laws must be considered as resting on convictions drawn from observation and experiment and not on intuitive perception.*' This not only shows that the term 'axiomatic' is used in the previous sentence in a sense that does not exclude an inductive origin, but it leaves us indebted

to Mr. Spencer for the discovery of the clearest and most authoritative expression of disapproval of his views respecting the nature of the Laws of Motion."

Let us analyze this "authoritative expression." It contains several startling implications, the disclosure of which the reader will find not uninteresting. Consider, first, what is implied by framing the thought that "the properties of matter might have been such as to render a totally different set of laws axiomatic." I will not stop to make the inquiry whether matter having properties fundamentally unlike its present ones, can be conceived; though such an inquiry, leading to the conclusion that no conception of the kind is possible, would show that the proposition is merely a verbal one. It will suffice if I examine the nature of this proposition that "the properties of matter *might have been*" other than they are. Does it express an experimentally-ascertained truth? If so, I invite Prof. Tait to describe the experiments. Is it an intuition? If so, then along with doubt of an intuitive belief concerning things *as they are*, there goes confidence in an intuitive belief concerning things *as they are not*. Is it an hypothesis? If so, the implication is that a cognition of which the negation is inconceivable (for an axiom is such) may be discredited by inference from that which is not a cognition at all, but simply a supposition. Does the reviewer admit that no conclusion can have a validity greater than is possessed by its premises? or will he say that the trustworthiness of cognitions increases in proportion as they are the more inferential? Be his answer what it may, I shall take it as unquestionable that nothing concluded can have a warrant higher than that from which it is concluded, though it may have a lower. Now the elements of the proposition before us are these:—As "the properties of matter might have

been such as to render a totally different set of laws axiomatic" [therefore] "these laws [now in force] must be considered as resting . . . not on intuitive perception:" that is, the intuitions in which these laws are recognized, must not be held authoritative. Here the cognition posited as premiss, is that the properties of matter might have been other than they are; and the conclusion is that our intuitions relative to existing properties are uncertain. Hence, if this conclusion is valid, it is valid because the cognition or intuition respecting what might have been, is more trustworthy than the cognition or intuition respecting what is! Scepticism respecting the deliverances of consciousness about things as they are, is based upon faith in a deliverance of consciousness about things as they are not!

I go on to remark that this "authoritative expression of disapproval" by which I am supposed to be silenced, even were its allegation as valid as it is fallacious, would leave wholly untouched the real issue. I pointed out how Prof. Tait's denial that any physical truths could be reached *à priori*, was contradicted by his own statement respecting physical axioms. The question thus raised the reviewer evades, and substitutes another with which I have just dealt. Now I bring forward again the evaded question.

In the passage I quoted, Prof. Tait, besides speaking of physical "*axioms*," says of them that due familiarity with physical phenomena gives the power of seeing "*at once*" "*their necessary truth*." These last words, which express his conception of an axiom, express also the usual conception. An axiom is defined as a "self-evident truth," or a truth that is seen *at once*; and the definition otherwise worded is—a "truth so evident *at first sight*, that no process of reasoning or demonstra-

tion can make it plainer." Now I contend that Prof. Tait, by thus committing himself to a definition of physical axioms identical with that which is given of mathematical axioms, tacitly admits that they have the same *à priori* character; and I further contend that no such nature as that which he describes physical axioms to have, can be acquired by experiment or observation during the life of an individual. Axioms, if defined as truths of which the *necessity* is at once seen, are thereby defined as truths of which the negation is inconceivable; and the familiar contrast between them and the truths established by individual experiences, is that these last never become such that their negations are inconceivable, however multitudinous the experiences may be. Thousands of times has the sportsman heard the report that follows the flash from his gun, but still he can imagine the flash as occurring silently; and countless daily experiments on the burning of coal, leave him able to conceive coal as remaining in the fire without ignition. So that the "convictions drawn from observation and experiment" during a single life, can never acquire that character which Prof. Tait admits physical axioms to have: in other words, physical axioms cannot be derived from personal observation and experiment. Thus, otherwise applying the reviewer's words, I "doubt whether we should have heard aught of this quotation" to which he calls my attention, had he studied the matter more closely; and he "leaves us indebted to" him "for the discovery of" a passage which serves to make clearer the untenability of the doctrine he so dogmatically affirms.

I turn now to what the reviewer says concerning the special arguments I used to show that the first law of

motion cannot be proved experimentally. After a bare enunciation of my positions, he says :—

“On the utterly erroneous character of these statements we do not care to dwell, we wish simply to call our reader’s attention to the conclusion arrived at. Is that a disproof of the possibility of an inductive proof? We thought that every tolerably educated man was aware that the proof of a scientific law *consisted in* showing that *by* assuming its truth, we could explain the observed phenomena.”

Probably the reviewer expects his readers to conclude that he could easily dispose of the statements referred to if he tried. Among scientific men, however, this cavalier passing over of my arguments will perhaps be ascribed to another cause. I will give him my reason for saying this. Those arguments, read in proof by one of the most eminent physicists, and by a specially-honoured mathematician, had their entire concurrence; and I have since had from another mathematician, standing among the very first, such qualified agreement as is implied in saying that the first law of motion cannot be proved by terrestrial observations (which is in large measure what I undertook to show in the paragraphs which the reviewer passes over so contemptuously). But his last sentence, telling us what he thought “every tolerably educated man was aware” of, is the one which chiefly demands attention. In it he uses the word *law*—a word which, conveniently wide in meaning, suits his purpose remarkably well. But we are here speaking of physical *axioms*. The question is whether the justification of a physical axiom consists in showing that by assuming its truth, we can explain the observed phenomena. If it does, then all distinction between hypothesis and axiom disappears. Mathematical axioms, for which there is no other definition than that which Prof. Tait gives of physical axioms, must stand on the same footing. Henceforth we must

hold that our warrant for asserting that "things which are equal to the same thing are equal to one another," consists in the observed truth of the geometrical and other propositions deducible from it and the associated axioms—the *observed* truth, mind; for the fabric of deductions yields none of the required warrant until these deductions have been tested by measurement. When we have described squares on the three sides of a right-angled triangle, cut them out in paper, and, by weighing them, have found that the one on the hypotenuse balances the other two; then we have got a fact which, joined with other facts similarly ascertained, justifies us in asserting that things which are equal to the same thing are equal to one another! Even as it stands, this implication will not, I think, be readily accepted; but we shall find that its unacceptability becomes still more conspicuous when the analysis is pursued to the end.

Continuing his argument to show that the laws of motion have no *à priori* warrant, the reviewer says:—

"Mr. Spencer asserts that Newton gave no proof of the *Laws of Motion*. The whole of the *Principia* was the proof, and the fact that, taken as a system, these laws account for the lunar and planetary motions, is the warrant on which they chiefly rest to this day."

I have first to point out that here, as before, the reviewer escapes by raising a new issue. I did not ask what he thinks about the *Principia*, and the proof of the laws of motion by it; nor did I ask whether others at this day, hold the assertion of these laws to be justified mainly by the evidence the Solar System affords. I asked what Newton thought. The reviewer had represented the belief that the second law of motion is knowable *à priori*, as too absurd even for me openly to enunciate. I pointed out that since Newton enunciates it openly under the title of an axiom, and offers no proof whatever of it, he did explicitly what I am blamed for

doing implicitly. And thereupon I invited the reviewer to say what he thought of Newton. Instead of answering, he gives me his opinion to the effect that the laws of motion are proved true by the truth of the *Principia* deduced from them. Of this hereafter. My present purpose is to show that Newton did not say this, and gave every indication of thinking the contrary. He does not call the laws of motion "hypotheses;" he calls them "axioms." He does not say that he assumes them to be true *provisionally*; and that the warrant for accepting them as actually true, will be found in the astronomically-proved truth of the deductions. He lays them down just as mathematical axioms are laid down—posits them as truths to be accepted *à priori*, from which follow consequences which must therefore be accepted. And though the reviewer thinks this an untenable position, I am quite content to range myself with Newton in thinking it a tenable one—if, indeed, I may say so without undervaluing the reviewer's judgment. But now, having shown that the reviewer evaded the issue I raised, which it was inconvenient for him to meet, I pass to the issue he substitutes for it. I will first deal with it after the methods of ordinary logic, before dealing with it after the methods of what may be called transcendental logic.

To establish the truth of a proposition postulated, by showing that the deductions from it are true, requires that the truth of the deductions shall be shown in some way that does not directly or indirectly assume the truth of the proposition postulated. If, setting out with the axioms of Euclid, we deduce the truths that "the angle in a semicircle is a right angle," and that "the opposite angles of any quadrilateral figure described in a circle, are together equal to two*right angles," and so forth; and if, because these propositions are true, we say that the

axioms are true, we are guilty of a *petitio principii*. I do not mean simply that if these various propositions are taken as true on the strength of the demonstrations given, the reasoning is circular, because the demonstrations assume the axioms; but I mean more—I mean that any supposed *experimental* proof of these propositions, by measurement, itself assumes the axioms to be justified. For even when the supposed experimental proof consists in showing that some two lines demonstrated by reason to be equal, are equal when tested in perception, the axiom that things which are equal to the same thing are equal to one another, is taken for granted. The equality of the two lines can be ascertained only by carrying from the one to the other, some measure (either a moveable marked line or the space between the points of compasses), and by assuming that the two lines are equal to one another, because they are severally equal to this measure. The ultimate truths of mathematics, then, cannot be established by any experimental proof that the deductions from them are true; since the supposed experimental proof takes them for granted. The same thing holds of ultimate physical truths. For the alleged *à posteriori* proof of these truths, has a vice exactly analogous to the vice I have just indicated. Every evidence yielded by astronomy that the axioms called “the laws of motion” are true, resolves itself into a fulfilled prevision that some celestial body or bodies, will be seen in a specified place, or in specified places, in the heavens, at some assigned time. Now the day, hour, and minute of this verifying observation, can be fixed only on the assumption that the Earth’s motion in its orbit and its motion round its axis, continue undiminished. Mark, then, the parallelism. One who chose to deny that things which are equal to the same thing are equal to one another, could never have it

proved to him by showing the truth of deduced propositions; since the testing process would in every case assume that which he denied. Similarly, one who refused to admit that motion, uninterfered with, continues in the same straight line at the same velocity, could not have it proved to him by the fulfilment of an astronomical prediction; because he would say that both the spectator's position in space, and the position of the event in time, were those alleged, only if the Earth's motions of translation and rotation were undiminished, which was the very thing he called in question. Evidently such a sceptic might object that the seeming fulfilment of the prediction, say a transit of Venus, may be effected by various combinations of the changing positions of Venus, of the Earth, and of the spectator on the Earth. The appearances may occur as anticipated, though Venus is at some other place than the calculated one; provided the Earth also is at some other place, and the spectator's position on the Earth is different. And if the first law of motion is not assumed, it must be admitted that the Earth and the spectator *may* occupy these other places at the predicted time: supposing that in the absence of the first law, this predicted time can be ascertained, which it cannot. Thus the testing process inevitably begs the question.

That the perfect congruity of all astronomical observations with all deductions from "the laws of motion," gives coherence to this group of intuitions and perceptions, and so furnishes a warrant for the entire aggregate of them which it would not have were any of them at variance, is unquestionable. But it does not therefore follow that astronomical observations can furnish a test for *each individual assumption*, out of the many which are simultaneously made. I will not dwell on the fact that the process of verification assumes the validity

of the assumptions on which acts of reasoning proceed; for the reply may be that these are shown to be valid apart from astronomy. Nor will I insist that the assumptions underlying mathematical inferences, geometrical and numerical, are involved; since it may be said that these are justifiable separately by our terrestrial experiences. But, passing over all else that is taken for granted, it suffices to point out that, in making every astronomical prediction, the three laws of motion and the law of gravitation are *all* assumed; that if the first law of motion is to be held proved by the fulfilment of the prediction, it can be so only by taking for granted that the two other laws of motion and the law of gravitation are true; and that non-fulfilment of the prediction would not disprove the first law of motion, since the error might be in one or other of the three remaining assumptions. Similarly with the second law: the astronomical proof of it depends on the truth of the accompanying assumptions. So that the warrants for the assumptions A, B, C, and D, are respectively such that A, B, and C, being taken as trustworthy, prove the validity of D; D being thus proved valid, joins C, and B, in giving a character to A; and so throughout. The result is that everything comes out right if they happen to be all true; but if one of them is false, it may destroy the characters of the other three, though these are in reality exact. Clearly, then, astronomical prediction and observation can never test any one of the premises by itself. They can only justify the entire aggregate of premises, mathematical and physical, joined with the entire aggregate of reasoning processes leading from premises to conclusions.

I now recall the reviewer's "thought," uttered in his habitual manner, "that every tolerably educated man was

aware that the proof of a scientific law *consisted in showing that by assuming its truth, we could explain the observed phenomena.*" Having from the point of view of ordinary logic dealt with this theory of proof as applied by the reviewer, I proceed to deal with it from the point of view of transcendental logic, as I have myself applied it. And here I have to charge the reviewer with either being ignorant of, or else deliberately ignoring, a cardinal doctrine of the System of Philosophy he professes to review—a doctrine set forth not in those four volumes of it which he seems never to have looked into; but in the one volume of it he has partially dealt with. For this principle which, in respect to scientific beliefs, he enunciates for my instruction, is one which, in *First Principles*, I have enunciated in respect to all beliefs whatever. In the chapter on the "Data of Philosophy," where I have inquired into the legitimacy of our modes of procedure, and where I have pointed out, that there are certain ultimate conceptions without which the intellect can no more stir "than the body can stir without help of its limbs," I have inquired how their validity or invalidity is to be shown; and I have gone on to reply that—

"Those of them which are vital, or cannot be severed from the rest without mental dissolution, must be assumed as true *provisionally* . . . leaving the assumption of their unquestionableness to be justified by the results.

"§ 40. How is it to be justified by the results? As any other assumption is justified—by ascertaining that all the conclusions deducible from it, correspond with the facts as directly observed—by showing the agreement between the experiences it leads us to anticipate, and the actual experiences. There is no mode of establishing the validity of any belief, except that of showing its entire congruity with all other beliefs."

Proceeding avowedly and rigorously on this principle,

I have next inquired what is the fundamental *process* of thought by which this congruity is to be determined, and what is the fundamental *product* of thought yielded by this process. This fundamental product I have shown to be the coexistence of subject and object; and then, describing this as a postulate to be justified by "its subsequently-proved congruity with every result of experience, direct and indirect," I have gone on to say that "the two divisions of self and not-self, are re-divisible into certain most general forms, the reality of which Science, as well as Common Sense, from moment to moment assumes." Nor is this all. Having thus assumed, *only provisionally*, this deepest of all intuitions, far transcending an axiom in self-evidence, I have, after drawing deductions occupying four volumes, deliberately gone back to the assumption (*Prin. of Psy.*, § 386). After quoting the passage in which the principle was laid down, and after reminding the reader that the deductions drawn had been found congruous with one another; I have pointed out that it still remained to ascertain whether this primordial assumption was congruous with all the deductions; and have thereupon proceeded, throughout eighteen chapters, to show the congruity. And yet having before him the volumes in which this principle is set forth with a distinctness, and acted upon with a deliberation, which I believe are nowhere exceeded, the reviewer enunciates for my benefit this principle of which he "thought that every tolerably educated man was aware"! He enunciates it as applying to limited groups of beliefs, to which it does not apply; and shuts his eyes to the fact that I have avowedly and systematically acted upon it in respect to the entire aggregate of our beliefs (axioms included) for which it furnishes the ultimate justification!

Here I must add another elucidatory statement.

which would have been needless had the reviewer read that which he criticizes. His argument proceeds throughout on the assumption that I understand *à priori* truths after the ancient manner, as truths independent of experience; and he shows this more than tacitly, where he "trusts" that he is "attacking one of the last attempts to deduce the laws of nature from our inner consciousness." Manifestly, a leading thesis of one of the works he professes to review, is entirely unknown to him—the thesis that forms of thought, and consequently the intuitions which those forms of thought involve, result entirely from the effects of experiences, organized and inherited. With the *Principles of Psychology* before him, not only does he seem unaware that it contains this doctrine, but though this doctrine, set forth in its first edition published nearly twenty years ago, has gained considerable currency, he seems never to have heard of it. The implication of this doctrine is, not that the "laws of nature" are deducible from "our inner consciousness," but that our consciousness has a pre-established correspondence with such of those laws (simple, perpetually presented, and never negatived) as have, in the course of practically-infinite ancestral experiences, registered themselves in our nervous structure. Had he taken the trouble to acquaint himself with this doctrine, he would have learned that the intuitions of axiomatic truths are regarded by me as latent in the inherited brain, just as bodily reflex actions are latent in the inherited nervous centres of a lower order; that such latent intuitions are made potentially more distinct by the greater definiteness of structure due to individual action and culture; and that thus, axiomatic truths, having a warrant entirely *à posteriori* for the race, have for the individual a warrant which, substantially *à priori*, is made complete *à posteriori*. And

he would then have learnt that as, during evolution, Thought has been moulded into increasing correspondence with Things; and as such correspondence, tolerably complete in respect of the simple, ever-present, and invariable relations, as those of space, has made considerable advance in respect of the primary dynamical relations; the assertion that the resulting intuitions are authoritative, is the assertion that the simplest uniformities of nature, as experienced throughout an immeasurable past, are better known than they are as experienced during an individual life. All which conceptions, however, being, as it seems, unheard of by the reviewer, he regards my trust in these primordial intuitions as like that of the Ptolemists in their fancies about perfection!

Thus far my chief antagonists, passive if not active, have been Prof. Tait and, by implication, Sir William Thomson, his coadjutor in the work quoted against me—men of standing, and the last of them of world-wide reputation as a mathematician and physicist. Partly because the opinions of such men demand attention, I have dealt with the questions raised at some length; and partly, also, because the origin and consequent warrant of physical axioms are questions of general and permanent interest. The reviewer, who by citing against me these authorities has gained for some of his criticisms consideration they would otherwise not deserve, I must, in respect of his other criticisms, deal with very briefly. Because, for reasons sufficiently indicated, I did not assail sundry of his statements, he has reiterated them as unassailable. I will here add no more than is needful to show how groundless is his assumption.

What the reviewer says on the metaphysical aspects of the propositions we distinguish as physical, need not

detain us long. His account of my exposition of "Ultimate Scientific Ideas," he closes by saying of me that "he is not content with less than showing that all our fundamental conceptions are inconceivable." Whether the reviewer knows what he means by an inconceivable conception, I cannot tell. It will suffice to say that I have attempted no such remarkable feat as that described. My attempt has been to show that objective activities, together with their objective forms, are inconceivable by us—that such symbolic conceptions of them as we frame, and are obliged to use, are proved, by the alternative contradictions which a final analysis of them discloses, to have no likeness to the realities. But the proposition that objective existence cannot be rendered in terms of subjective existence, the reviewer thinks adequately expressed by saying that "our fundamental conceptions" (subjective products) "are inconceivable" (cannot be framed by subjective processes)! Giving this as a sample from which may be judged his fitness for discussing these ultimate questions, I pass over his physico-metaphysical criticisms, and proceed at once to those which his special discipline may be assumed to render more worthy of attention.

Quoting a passage relative to the law that "all central forces vary inversely as the squares of the distances," he derides the assertion that "this law is not simply an empirical one, but one deducible mathematically from the relations of space—one of which the negation is inconceivable." Now whether this statement can or cannot be fully justified, it has at any rate none of that absurdity alleged by the reviewer. When he puts the question—"Whence does he [do I] get this?" he invites the suspicion that his mind is not characterized by much excursiveness. It seems never to have occurred to him that,

if rays like those of light radiate in straight lines from a centre, the number of them falling on any given area of a sphere described from that centre, will diminish as the square of the distance increases, because the surfaces of spheres vary as the squares of their radii. For, if this has occurred to him, why does he ask whence I get the inference? The inference is so simple a one as naturally to be recognized by those whose thoughts go a little beyond their lessons in geometry.* If the reviewer means to ask, whence I get the implied assumption that central forces act only in straight lines, I reply that this assumption has a warrant akin to that of Newton's first axiom, that a moving body will continue moving in a straight line unless interfered with. For that the force exerted by one centre on another should act in a curved line, implies the conception of some second force, complicating the direct effect of the first. And, even could a central force be truly conceived as acting in lines not straight, the *average* distribution of its effects upon the inner surface of the surrounding sphere, would still follow the same law. Thus, whether or not the law be accepted on *à priori* grounds, the assumed absurdity of representing it to have *à priori* grounds, is not very obvious. Respecting this statement of mine the reviewer goes on to say—

“This is a wisdom far higher than that possessed by the discoverer of the great law of attraction, who was led to consider it from no cogitations on the relations of space, but from observations of the

* That I am certainly not singular in this view, is shown to me, even while I write, by the just-issued work of Prof. Jevons on the *Principles of Science: a Treatise on Logic and Scientific Method*. In vol. ii., p. 141, Prof. Jevons remarks respecting the law of variation of the attractive force, that it “is doubtless connected at this point with the primary properties of space itself, and is so far conformable to our necessary ideas.”

movements of the planets; and who was so far from rising to that clearness of view of the truth of his great discovery, which is expressed by the phrase, 'its negation is inconceivable,' that he actually abandoned it for a time, because (through an error in his estimate of the earth's diameter) it did not seem fully to account for the motion of the moon."

To the first clause in this sentence, I have simply to give a direct denial; and to assert that neither Newton's "observations of the movements of the planets" nor other such observations continued by all astronomers for all time, would yield "the great law of attraction." Contrariwise, I contend that when the reviewer says, by implication, that Newton had no antecedent hypothesis respecting the cause of the planetary motions, he (the reviewer) is not only going beyond his possible knowledge, but he is asserting that which even a rudimentary acquaintance with the process of discovery, might have shown him was impossible. Without framing, beforehand, the supposition that there was at work an attractive force varying inversely as the square of the distance, no such comparison of observations as that which led to the establishment of the theory of gravitation could have been made. On the second clause of the sentence, in which the reviewer volunteers for my benefit the information that Newton "actually abandoned" his hypothesis for a while because it did not bring out right results, I have first to tell him that, in an early number of the very periodical containing his article,* I cited this fact (using these same words) at a time when he was at school, or before he went there.† I have next to assert

* See Essay on "The Genesis of Science," in the *British Quarterly Review* for July, 1854, p. 127.

† I do not say this at random. The reviewer, who has sought rather to make known than to conceal his identity, took his degree in 1868.

that this fact is irrelevant; and that Newton, while probably seeing it to be a necessary implication of geometrical laws that central forces vary inversely as the squares of the distances, did not see it to be a necessary implication of any laws, geometrical or dynamical, that there exists a force by which the celestial bodies affect one another; and therefore doubtless saw that there was no *à priori* warrant for the doctrine of gravitation. The reviewer, however, aiming to substitute for my "confused notions" his own clear ones, wishes me to identify the proposition—Central forces vary inversely as the squares of the distances—with the proposition—There is a cosmical force which varies inversely as the squares of the distances. But I decline to identify them; and I suspect that a considerable distinction between them was recognized by Newton. Lastly, apart from all this, I have to point out that even had Newton thought the existence of an attractive force throughout space was an *à priori* truth, as well as the law of variation of such a force if it existed; he would still, naturally enough, pause before asserting this law, when he found his deductions from it did not correspond with the facts. To suppose otherwise, is to ascribe to him a rashness which no disciplined man of science could be guilty of.

See, then, the critical capacity variously exhibited in the space of a single sentence. The reviewer, quite erroneously, thinks that observations unguided by hypotheses suffice for physical discoveries. He seems unaware that, on *à priori* grounds, the law of the inverse square had been suspected as the law of some cosmical force, before Newton. He asserts, without warrant, that no such *à priori* conception preceded, in Newton's mind, his observations and calculations. He confounds the law of variation of a force, with the existence of a force varying

according to that law. And he concludes that Newton could have had no *a priori* conception of the law of variation, because he did not assert the existence of a force varying according to this law in defiance of the evidence as then presented to him!

Now that I have analyzed, with these results, the first of his criticisms, the reader will neither expect me to waste time in similarly dealing with the rest *seriatim*, nor will he wish to have his own time occupied in following the analysis. To the evidence thus furnished of the reviewer's fitness for the task he undertakes, it will suffice if I add an illustration or two of the *animus* which leads him to make grave imputations on trivial grounds, and to ignore the evidence which contradicts his interpretations.

Because I have spoken of a balanced system, like that formed by the sun and planets, as having the "peculiarity, that though the constituents of the system have relative movements, the system, as a whole, has no movement," he unhesitatingly assumes me to be unaware that in a system of bodies whose movements are not balanced, it is equally true that the centre of gravity remains constant. Ignorance of a general principle in dynamics is alleged against me solely because of this colloquial use of the word "peculiarity," where I should have used a word (and there is no word perfectly fit) free from the implication of exclusiveness. If the reviewer were to assert that arrogance is a "peculiarity" of critics; and if I were thereupon to charge him with entire ignorance of mankind, many of whom besides critics are arrogant, he would rightly say that my conclusion was a very large one to draw from so small a premise.

To this example of strained inference I will join an example of what seems like deliberate misconstruc-

tion. From one of my essays (not among the works he professes to deal with) the reviewer, to strengthen his attack, brings a strange mistake; which, even without inquiry, any fair-minded reader would see must be an oversight. A statement true of a single body acted on by a tractive force, I have inadvertently pluralized: being so possessed by another aspect of the question, as to overlook the obvious fact that with a plurality of bodies the statement became untrue. Not only, however, does the reviewer ignore various evidences furnished by the works before him, that I could not really think what I had there said, but he ignores a direct contradiction contained in the paragraph succeeding that from which he quotes. So that the case stands thus:—On two adjacent pages I have made two opposite statements, both of which I cannot be supposed to believe. One of them is right; and this the reviewer assumes I do not believe. One of them is glaringly wrong; and this the reviewer assumes I do believe. Why he made this choice no one who reads his criticism will fail to see.

Even had his judgments more authority than is given to them by his mathematical honours, this brief characterization would, I think, suffice. Perhaps already, in rebutting the assumption that I did not answer his allegations because they were unanswerable, I have ascribed to them an unmerited importance. For the rest, suggesting that their value may be measured by the value of that above dealt with as a sample, I leave them to be answered by the works they are directed against.

Here I end. The foregoing pages, while serving, I think, the more important purpose of making clearer the relations of physical axioms to physical knowledge, incidentally justify the assertion that the reviewer's charges of fallacious reasoning and ignorance of the nature of

proof, recoil on himself. When, in his confident way, he undertakes to teach me the nature of our warrant for scientific beliefs, ignoring absolutely the inquiry contained in *Principles of Psychology*, concerning the relative values of direct intuitions and reasoned conclusions, he lays himself open to a sarcasm which is sufficiently obvious. And when a certain ultimate principle of justification for our beliefs, set forth and acted upon in the *System of Synthetic Philosophy* more distinctly than in any other work, is enunciated by him for my instruction, as one which he "thought that every tolerably educated man was aware" of, his course is one for which I find no fit epithet in the vocabulary I permit myself to use. That in some cases he has shown eagerness to found charges on misinterpretations little less than deliberate, has been sufficiently shown; as also that, in other cases, his own failure to discriminate is made the ground for ascribing to me beliefs that are manifestly untenable. Save in the single case of a statement respecting collisions of bodies, made by me without the needful qualification, I am not aware of any errors he detects, except errors of oversight or those arising from imperfect expression and inadequate exposition. When he unhesitatingly puts the worst constructions on these, it cannot be because his own exactness is such that no other constructions occur to him; for he displays an unusual capacity for inadvertencies, and must have had many experiences showing him how much he might be wronged by illiberal interpretations of them. One who in twenty-three professed extracts makes fifteen mistakes—words omitted, or added, or substituted—should not need reminding how largely mere oversight may raise suspicion of something worse. One who shows his notions of accurate statement by asserting that as I substitute "persistence"

for "conservation," I therefore identify Persistence of *Force* with Conservation of *Energy*, and debits me with the resulting incongruities—one who, in pursuance of this error, confounds a special principle with the general principle it is said to imply, and thereupon describes a wider principle as being included in a narrower (p. 481)—one who speaks of our "inner consciousness" (p. 488), so asserting, by implication, that we have an outer consciousness—one who talks of an inconceivable conception; ought surely to be aware how readily lax expressions may be turned into proofs of absurd opinions. And one who, in the space of a few pages, falls into so many solecisms, ought to be vividly conscious that a whole volume thus written would furnish multitudinous statements from which a critic, moved by a spirit like his own, might evolve abundant absurdities; supplying ample occasion for blazoning the tops of pages with insulting words.

[A letter, drawn from Prof. Tait by the foregoing criticisms, and published by him in Nature, initiated a controversy carried on in that periodical for some months. Partly in justification of my position, and partly as tending to make clearer the nature and origin of physical axioms, I append certain portions of the correspondence, with some additional explanations and comments.]

THESES.

1. *If A produces B, then 2 A will produce 2 B.*

This is the blank form of causal relation quantitatively considered, when the causes and effects are simple—that is, are unimpeded by other causes and uncomplicated by other effects; and whenever two or more causes co-operate, there is no possibility of determining the relation between the compound cause and the compound effect except by assuming that between each co-operating cause and its separate effect there exists this same quantitative relation.

2. *This truth holds whatever the natures of the simple causes and simple effects; and is an à priori assumption made in conducting every experiment and in reasoning from it.*

Every process of weighing, every chemical analysis, every physical investigation, proceeds on this truth without assigning warrant for it; and in allowing for the effect of any minor cause that interferes with the major cause, this same truth is assumed.

3. *When A is an impressed force and B the produced motion, then the general truth that if A produces B, 2 A will produce 2 B, becomes the more special truth called the Second Law of Motion.*

Newton's amplified statement of this Law is—"If any force generates a motion, a double force will generate double the motion, a triple force triple the motion, whether that force be impressed altogether and at once, or gradually and successively." And his further clause, asserting that this law holds whether the directions of the forces are or are not the same, asserts a proportionality between each force and its produced motion, such as we have seen to be invariably assumed between each cause and its separate effect, when there are co-operating causes.

4. *This Law may be affirmed, without specification of the modes in which the impressed force and the resulting motion are to be estimated.*

Newton's statement is abstract. Taking for granted right modes of measurement, it asserts that the alteration of motion (rightly measured) is proportional to the impressed force (rightly measured).

5. *No à posteriori proof of the general ultimate physical truth (or of this more special truth it includes) is possible; because every supposed process of verification assumes it.*

These, cleared from entanglements, are the theses held by me, and defended in the following pages.

APPENDIX A.

(TO REPLIES TO CRITICISMS.)

LETTERS, AND PARTS OF LETTERS PUBLISHED IN *NATURE*,

Between March 26 and June 18, 1874; here reproduced (with notes) as further elucidating the doctrine respecting physical axioms; set forth in the foregoing "Replies to Criticisms."

(From *Nature*, April 16, 1874.)

ABSENCE from town has delayed what further remarks I have to make respecting the disputed origin of physical axioms.

The particular physical axiom in connection with which the general question was raised, was the Second Law of Motion: It stands in the *Principia* as follows:—

"The alteration of motion is ever proportional to the motive force impressed; and is made in the direction of the right line in which that force is impressed."

"If any force generates a motion, a double force will generate double the motion, a triple force triple the motion, whether that force be impressed altogether and at once, or gradually and successively. And this motion (being always directed the same way with the generating force), if the body moved before, is added to or subducted from the former motion, according as they directly conspire with or are directly contrary to each other; or obliquely joined, when they are oblique, so as to produce a new motion compounded from the determination of both."

As this, like each of the other Laws of Motion, is called an

axiom;* as the paragraph appended to it is simply an amplification, or re-statement in a more concrete form; as there are no facts named as bases of induction, nor any justifying experiment; and as Newton proceeds forthwith to draw deductions; it was a legitimate inference that he regarded this truth as *à priori*. My statement to this effect was based on the contents of the *Principia* itself; and I think I was warranted in assuming that the nature of the Laws of Motion, as conceived by Newton, was to be thence inferred.

The passages quoted by the *British Quarterly Reviewer* from Newton's correspondence, which were unknown to me, show that this was not Newton's conception of them. Thus far, then, my opponent has the best of the argument. Several qualifying considerations have to be set down, however.

(1) Clearly, the statements contained in the *Principia* do not convey Newton's conception; otherwise there would have been no need for his explanations. The passages quoted prove that he wished to exclude these cardinal truths from the class of hypotheses, which he said he did not make; and to do this he had to define them.

(2) By calling them "axioms," and by yet describing them as principles "*deduced* from phenomena," he makes it manifest that he gives the word "axiom" a sense widely unlike the sense in which it is usually accepted.

(3) Further, the quotations fail to warrant the statement that the Laws of Motion are proved true by the truth of the *Principia*. For if the fulfilment of astronomical predictions made in pursuance of the *Principia*, is held to be the evidence "on which they chiefly rest to this day," then, until thus justified, they are unquestionably hypotheses. Yet Newton says they are not hypotheses.

Newton's view may be found without seeking for it in his

* It is true that in Newton's time, "axiom" had not the same rigorously defined meaning as now; but it suffices for my argument that, standing unproved as a basis for physical deductions, it bears just the same relation to them that a mathematical axiom does to mathematical deductions.

letters: it is contained in the *Principia* itself. The scholium to Corollary VI. begins thus:—

“Hitherto I have laid down such principles as have been received by mathematicians, and are *confirmed* by abundance of experiments. By the two first Laws and the two first Corollaries, Galileo discovered that the descent of bodies observed the duplicate ratio of the time, and that the motion of projectiles was in the curve of a parabola; experience *agreeing* with both,” &c.

Now as this passage precedes the deductions constituting the *Principia*, it shows conclusively, in the first place, that Newton did not think “the whole of the *Principia* was the proof” of the Laws of Motion, though the Reviewer asserts that it is. Further, by the words I have italicised, Newton implicitly describes Galileo as having asserted these Laws of Motion, if not as gratuitous hypotheses (which he says they are not), then as *a priori* intuitions. For a proposition which is *confirmed* by experiment, and which is said to *agree* with experience, must have been entertained before the alleged verifications could be reached. And as before he made his experiments on falling bodies and projectiles, Galileo had no facts serving as an inductive basis for the Second Law of Motion, the law could not have been arrived at by induction.

Let me end what I have to say on this vexed question by adding a further reason to those I have already given, for saying that physical axioms cannot be established experimentally. The belief in their experimental establishment rests on the tacit assumption that experiments can be made, and conclusions drawn from them, without any truths being postulated. It is forgotten that there is a foundation of preconceptions without which the perceptions and inferences of the physicist cannot stand—*preconceptions which are the products of simpler experiences than those yielded by consciously-made experiments*. Passing over the many which do not immediately concern us, I will name only that which does,—the exact quantitative relation [of proportionality] between cause and effect. It is taken by the chemist as a truth needing no proof, that if two volumes of hydrogen unite with one volume of oxygen to form a certain

quantity of water, four volumes of hydrogen uniting with two volumes of oxygen will form double the quantity of water. If a cubic foot of ice at 32° is liquefied by a specified quantity of heat, it is taken to be unquestionable that three times the quantity of heat will liquefy three cubic feet. And similarly with mechanical forces, the unhesitating assumption is that if one unit of force acting in a given direction produces a certain result, two units will produce twice the result. Every process of measurement in a physical experiment takes this for granted; as we see in one of the simplest of them—the process of weighing. If a measured quantity of metal, gravitating towards the Earth, counterbalances a quantity of some other substance, the truth postulated in every act of weighing is, that any multiple of such weight will counterbalance an equi-multiple of such substance. That is to say, each unit of force is assumed to work its equivalent of effect in the direction in which it acts. Now this is nothing else than the assumption which the Second Law of Motion expresses in respect to effects of another kind. “If any force generates a motion, a double force will generate a double motion,” &c., &c.; and when carried on to the composition of motions, the law is, similarly, the assertion that any other force, acting in any other direction, will similarly produce in that direction a proportionate motion. So that the law simply asserts the exact equivalence [or proportionality] of causes and effects of this particular class, while all physical experiments *assume* this exact equivalence [or proportionality] among causes and effects of all classes. Hence, the proposal to prove the Laws of Motion experimentally, is the proposal to make a wider assumption for the purpose of justifying one of the narrower assumptions included in it.

Reduced to its briefest form, the argument is this:—If definite quantitative relations [of proportionality] between causes and effects be assumed *à priori*; then, the Second Law of Motion is an immediate corollary. If there are not definite quantitative relations [of proportionality] between causes and effects, all the conclusions drawn from physical experiments are invalid. And

further, in the absence of this *à priori* assumption of equivalence, the quantified conclusion from any experiment may be denied, and any other quantification of the conclusion asserted.*

HERBERT SPENCER.

Entire misconstruction of the view expressed above, having been shown by a new assailant, who announced himself as also "A Senior Wrangler," Mr. James Collier wrote on my behalf an explanatory letter, published in *Nature* for May 21, from which the following passages are extracts:—

"The cue may be taken from an experience described in Mr. Spencer's *Principles of Psychology* (§ 468, note), where it is shown that when with one hand we pull the other, we have in the feeling of tension produced in the limb pulled, a measure of the reaction that is equivalent to the action of the other limb. Both terms of the relation of cause and effect are in this case present to consciousness as muscular tensions, which are our symbols of forces in general. While no motion is produced they are felt to be equal, so far as the sensations can serve to measure equality; and when excess of tension is felt in the one arm, motion is experienced in the other. Here, as in the examples about to be given, the relation between cause and effect, though numerically indefinite, is definite in the respect that every additional increment of cause produces an additional increment of effect; and it is out of this and similar experiences that the idea of the relation of proportionality grows and becomes organic.

"A child, when biting its food, discovers that the harder he bites the deeper is the indentation; in other words, that the

* The above letter, written after absence at Easter had involved a week's delay, and written somewhat hurriedly to prevent the delay of a second week, was less carefully revised than it should have been. The words in square brackets, obviously implied by the reasoning, and specifically implied by the illustrations, were not in the letter as originally published.

more force applied, the greater the effect. If he tears an object with his teeth, he finds that the more he pulls the more the thing yields. Let him press against something soft, as his own person, or his clothes, or a lump of clay, and he sees that the part or object pressed yields little or much, according to the amount of the muscular strain. He can bend a stick the more completely the more force he applies. Any elastic object, as a piece of india-rubber or a catapult, can be stretched the farther the harder he pulls. If he tries to push a small body, there is little resistance and it is easy to move; but he finds that a big body presents greater resistance and is harder to move. The experience is precisely similar if he attempts to lift a big body and a little one; or if he raises a limb, with or without any object attached to it. He throws a stone: if it is light, little exertion propels it a considerable distance; if very heavy, great exertion only a short distance. So, also, if he jumps, a slight effort raises him to a short height, a greater effort to a greater height. By blowing with his mouth he sees that he can move small objects, or the surface of his morning's milk, gently or violently according as the blast is weak or strong. And it is the same with sounds: with a slight strain on the vocal organs he produces a murmur; with great strain he can raise a shout.

"The experiences these propositions record all implicate the same consciousness—the notion of proportionality between force applied and result produced; and it is out of this latent consciousness that the axiom of the perfect quantitative equivalence of the relations between cause and effect is evolved. To show how rigorous, how irreversible, this consciousness becomes, take a boy and suggest to him the following statements:—Can he not break a string he has, by pulling? tell him to double it, and then he will break it. He cannot bend or break a particular stick: let him make less effort and he will succeed. He is unable to raise a heavy weight: tell him he errs by using too much force. He can't push over a small chest: he will find it easier to upset a larger one. By blowing hard he cannot move a given object: if he blows lightly, he will move it. By great exertion

he cannot make himself audible at a distance: but he will make himself heard with less exertion at a greater distance. Tell him to do all or any of these, and of course he fails. The propositions are unthinkable, and their unthinkableness shows that the consciousness which yields them is irreversible. These, then, are preconceptions, properly so called, which have grown unconsciously out of the earliest experiences, beginning with those of the sucking infant, are perpetually confirmed by fresh experiences, and have at last become organized in the mental structure.

* * * * *

“Mr. Spencer’s argument appears to be briefly this:—1. There are numberless experiences unconsciously acquired and unconsciously accumulated during the early life of the individual (in harmony with the acquisitions of all ancestral individuals) which yield the preconception, long anteceding anything like conscious physical experiments, that physical causes and effects vary together quantitatively. This is gained from all orders of physical experiences, and forms a universal preconception respecting them, which the physicist or other man of Science brings with him to his experiments.

“2. Mr. Spencer showed in three cases—chemical, physical, and mechanical—that this preconception, so brought, was tacitly involved in the conception which the experimenter drew from the results of his experiments.

“3. Having indicated this universal preconception, and illustrated its presence in these special conceptions, Mr. Spencer goes on to say that it is involved also in the special conception of the relation between force and motion, as formulated in the ‘Second Law of Motion.’ He asserts that this is simply one case out of the numberless cases in which all these consciously-reasoned conclusions rest upon the unconsciously-formed conclusions that precede reasoning. Mr. Spencer alleges that as it has become impossible for a boy to think that by a smaller effort he can jump higher, and for a shopman to think that smaller weights will outbalance greater quantities, and for the

physicist to think that he will get increased effects from diminished causes, so it is impossible to think that 'alteration of motion' is not 'proportional to the motive force impressed.' And he maintains that this is, in fact, a latent implication of unconsciously-organized experiences just as much as those which the experimenter necessarily postulates."

To meet further misinterpretations, a second letter was written by Mr. Collier and published in *Nature* for June 4. The following are passages from it:—

"Having but limited space, and assuming that the requisite qualifications would be made by unbiased readers, I passed over all those details of the child's experiences which would have been required in a full exposition. Of course I was aware that in the bending of a stick the visible effect does not increase in the same ratio as the force applied; and hardly needed the 'Senior Wrangler' to tell me that the resistance to a body moving through a fluid increases in a higher ratio than the velocity. It was taken for granted that he, and those who think with him, would see that out of all these experiences, in some of which the causes and effects are simple, and in others of which they are complex, there grows the consciousness that the proportionality is the more distinct the simpler the antecedents and consequents. This is part of the preconception which the physicist brings with him and acts upon. Perhaps it is within the 'Senior Wrangler's' knowledge of physical exploration, that when the physicist finds a result not bearing that ratio to its assigned cause which the two were ascertained in other cases to have, he immediately assumes the presence of some perturbing cause or causes, which modify the ratio. There is, in fact, no physical determination made by any experimenter which does not assume, as an *à priori* necessity, that there cannot be a deviation from proportion without the presence of such additional cause.

“Returning to the general issue, perhaps the ‘Senior Wrangler’ will pay some respect to the judgment of one who was a Senior Wrangler too, and a great deal more—who was distinguished not only as a mathematician but as an astronomer, a physicist, and also as an inquirer into the methods of science: I mean Sir John Herschel. In his *Discourse on the Study of Natural Philosophy*, he says:—

“‘When we would lay down general rules for finding and facilitating our search, among a great mass of assembled facts, for their common cause, we must have regard to the characters of that relation which we intend by cause and effect.’

“Of these ‘characters’ he sets down the third and fourth in the following terms:—

“‘Increase or diminution of the effect, with the increased or diminished intensity of the cause, in cases which admit of increase and diminution.’

“‘Proportionality of the effect to its cause in all cases of *direct unimpeded* action.’

“Observe that, in Sir J. Herschel’s view, these are ‘characters’ of the relation of cause and effect to be accepted as ‘general rules for *guiding* and facilitating our search’ among physical phenomena—truths that must be taken for granted *before* the search, not truths derived *from* the search. Clearly, the ‘proportionality of the effect to its cause in all cases of direct and unimpeded action’ is here taken as *à priori*. Sir J. Herschel would, therefore, have asserted, with Mr. Spencer, that the Second Law of Motion is *à priori*; since this is one of the cases of the ‘proportionality of the effect to its cause.’

“And now let the ‘Senior Wrangler’ do what Sir J. Herschel has not done or thought of doing—*prove* the proportionality of cause and effect. Neither he, nor any other of Mr. Spencer’s opponents, has made the smallest attempt to deal with this main issue. Mr. Spencer alleges that this cognition of proportionality is *à priori*: not in the old sense, but in the sense that it grows out of experiences that precede reasoning. His opponents, following Prof. Tait in the assertion that Physics is a purely experimental science, containing, therefore, no *à priori*

truths, affirm that this cognition is *à posteriori*—a product of conscious induction. Let us hear what are the experiments. It is required to establish the truth that there is proportionality between causes and effects, *by a process which nowhere assumes* that if one unit of force produces a certain unit of effect, two units of such force will produce two units of such effect. Until the ‘Senior Wrangler’ has done this he has left Mr. Spencer’s position untouched.”

APPENDIX B.

(TO REPLIES TO CRITICISMS.)

FURTHER CORRESPONDENCE.

[AFTER publication of the letters from which the foregoing are reproduced, there appeared in *Nature* certain rejoinders containing misrepresentations even more extreme than those preceding them. There resulted a direct correspondence with two of the writers—Mr. Robert B. Hayward, of Harrow, and Mr. J. F. Moulton, my original assailant, the author of the article in the *British Quarterly Review*. This correspondence, in which I demanded from these gentlemen the justifications for their statements, formed part of this Appendix in its pamphlet form, as distributed among those who are competent to judge of the questions at issue. It is needless to give permanence to the replies and rejoinders. The character of Mr. Moulton's allegations, quite congruous with those I have exposed in the "Replies to Criticisms," may be inferred from one of the sentences closing my reply—"Wonderful to relate, my inductive proof that proportionality [of cause and effect] is taken for granted, he cites as my inductive proof of proportionality itself!" The result of the interchange of letters with Mr. Hayward, was to make it clear that "the thing I assert is not really disputed; and the thing disputed, I have nowhere asserted." While, however, the controversial part of the correspondence may fitly disappear, I retain an expository part embodied in the following letter to Mr. Hayward.]

38, Queen's Gardens, Bayswater,
June 21st, 1874.

SIR,—Herewith I send you a copy of your letter with my interposed comments. I think those comments will make it clear to you that I have not committed myself to three different definitions of our consciousness of the Second Law of Motion.

As others may still feel a difficulty, such as you seem to have

felt, in understanding that which familiarity has made me regard as simple, I will endeavour, by a synthetic exposition, to make clear the way in which these later and more complex products of organized experiences stand related to earlier and simpler products. To make this exposition easier to follow, I will take first our Space-consciousness and the derived conceptions.

On the hypothesis of Evolution, the Space-consciousness results from organized motor, tactual, and visual experiences. In the *Principles of Psychology*, §§ 326—346, I have described in detail what I conceive to have been its genesis. Such Space-consciousness so generated, is one possessed in greater or less degree by all creatures of any intelligence; becoming wider, and more definite, according to the degree of mental evolution which converse with the environment has produced. How deeply registered the external relations have become in the internal structure, is shown by the facts that the decapitated frog pushes away with one or both legs the scalpel applied to the hind part of its body, and that the chick, as soon as it has recovered from the exhaustion of escaping from the egg, performs correctly-guided actions (accompanied by consciousness of distance and direction) in picking up grains. Ascending at once to such organized and inherited Space-consciousness as exists in the child, and which from moment to moment it is making more complete by its own experiences (aiding the development of its nervous system into the finished type of the adult, by the same exercises that similarly aid the development of its muscular system), we have to observe that, along with increasingly-definite ideas of distance and direction, it gains unawares certain more special ideas of geometrical relations. Take one group of these. Every time it spreads open its fingers it sees increase of the angles between them, going along with increase of the distances between the finger-tips. In opening wide apart its own legs, and in seeing others walk, it has continually before it the relation between increase or decrease of base in a triangle having equal sides, and increase or decrease

of the angle included by those sides. [The relation impressed on it being simply that of *concomitant variation*: I do not speak of any more definite relation, which, indeed, is unthinkable by the young.] It does not observe these facts in such way as to be conscious that it has observed them; but they are so impressed upon it as to establish a rigid association between certain mental states. Various of its activities disclose space-relations of this class more definitely. The drawing of a bow exhibits them in another way and with somewhat greater precision; and when, instead of the ends of a bow, capable of approaching one another, the points of attachment are fixed and the string elastic, the connexion between increasing length in the sides of an isosceles triangle and increasing acuteness of the included angle, is still more forced upon the attention; though it still does not rise into a conscious cognition. This is what I mean by an "unconsciously-formed pre-conception." When, in course of time, the child, growing into the boy, draws diagrams on paper, and, among other things, draws isosceles triangles, the truth that, the base being the same, the angle at the apex becomes more acute as the sides lengthen, is still more definitely displayed to him; and when his attention is drawn to this relation he finds that he cannot think of it as being otherwise. If he imagines the lengths of the sides to change, he cannot exclude the consciousness of the correlative change in the angle; and presently, when his mental power is sufficiently developed, he perceives that if he continues to lengthen the sides in imagination, the lines approach parallelism as the angle approaches zero: yielding a conception of the relations of parallel lines. Here the consciousness has risen into the stage of definite conception. But, manifestly, the definite conception so reached is but a finishing of the preconceptions previously reached, and would have been impossible in their absence; and these unconsciously-formed preconceptions would similarly have been impossible in the absence of the still earlier consciousnesses of distance, direction, relative position, embodied in the consciousness of Space. The whole evolution

is one; the arrival at the distinct conception is the growing up to an ultimate definiteness and complexity; and it can no more be reached without passing through the earlier stages of indefinite consciousness, than the adult bodily structure can be reached without passing through the structures of the embryo, the infant, and the child.*

Through a parallel evolution arises, first the vague consciousness of forces as exerted by self and surrounding things; presently, some discrimination in respect of their amounts as related to their effects; later, an association formed unawares

* Here, in explaining the genesis of special space-intuitions, I have singled out a group of experiences which, in *Nature*, May 28, Mr. Hayward had chosen as illustrating the absurdity of supposing that the scientific conception of proportionality could be reached as alleged. He said:—

"It is hardly a parody of Mr. Collier's remarks to say:—'A child discovers that the greater the angle between his legs the greater the distance between his feet, an experience which implicates the notion of proportionality between the angle of a triangle and its opposite side;' a preconception, as it appears to me, with just as good a basis as that whose formation Mr. Collier illustrates, but one which, as I need hardly add, is soon corrected by a conscious study of geometry or by actual measurement."

I am indebted to Mr. Hayward for giving this instance. It conveniently serves two purposes. It serves to exemplify the connexion between the crude preconceptions unconsciously formed by earlier experiences, and the conceptions consciously evolved out of them by the help of later experiences, when the requisite powers of analysis and abstraction have been reached. And at the same time it serves to show the failure of my opponents to understand how, in the genesis of intelligence, the scientific conception of exact proportionality develops from the crude, vague, and inaccurate preconception. For while the notion of proportionality acquired by the child in Mr. Hayward's example, is not true, it is an approximation towards one which is true, and one which is reached when its more developed intelligence is brought critically to bear on the facts. Eventually it is discovered that the angle is not proportional to the subtending side, but to the subtending arc, and this is discovered *in the process of disentangling a simple relation from other relations which complicate and disguise it*. Between the angle and the arc there is exact proportionality, for the reason that only one set of directly-connected space-relations are concerned: the distance of the subtending arc from the subtended angle, remains constant—there is no change in the relation between the increasing angle and the increasing arc; and therefore the two vary together in direct proportion. But it is otherwise with the subtend-

between greatness of quantity in the two, and between smallness of quantity in the two; later still, a tacit assumption of proportionality, though without a distinct consciousness that the assumption has been made; and, finally, a rising of this assumption into definite recognition, as a truth necessarily holding where the forces are simple. Throughout its life every creature has, *within the actions of its moving parts*, forces and motions conforming to the Laws of Motion. If it has a nervous system, the differences among the muscular tensions and the movements initiated, register themselves in a vague way in that nervous system. As the nervous system develops, along with more developed limbs, there are at once more numerous different experiences * * * of momentum generated, of connected actions and reactions (as when an animal tears the food which it holds with its paws); and, at the same time, there are, in its more developed nervous system, increased powers of appreciating and registering these differences. All the resulting connexions in consciousness, though unknowingly formed and unknowingly entertained, are

ing side. The parts of this stand in different relations of distance from the subtended angle; and as the line is lengthened, each added part differs from the preceding parts in its distance from the angle. That is to say, one set of simple directly-connected geometrical relations, is here involved with another set; and the relation between the side and the angle is such that the law of relative increase involves the co-operation of two sets of factors. Now the distinguishing the true proportionality (between the angle and the arc) from the relation which simulates proportionality (between the angle and the side) is just that process of final development of exact conceptions, which I assert to be the finishing step of all the preceding development; and to be impossible in its absence. And the truth to which my assailants shut their eyes, is that, just as among these conceptions of space-relations, the conception of exact proportionality can be reached only by evolution from the crude notion of proportionality, formed before reasoning begins; so, among the force-relations, the conception of proportionality finally reached, when simple causes and their effects are disentangled by analytical intelligence, can be reached only by evolution of the crude notion of proportionality, established as a preconception by early experiences which reinforce ancestral experiences.

ever present as guides to action: witness the proportion between the effort an animal makes and the distance it means to spring; or witness the delicate adjustments of muscular strains to changes of motion, made by a swallow catching flies or a hawk swooping on its quarry. Manifestly, then, these experiences, organized during the earlier stages of mental evolution, form a body of consciousness, not formulated into cognitions, not present even as preconceptions, but nevertheless present as a mass of associations *in which the truths of relation between force and motion are potentially present*. On ascending to human beings of the uncultured sort, we reach a stage at which some nascent generalization of these experiences occurs. The savage has not expressed to himself the truth that if he wants to propel his spear further he must use more force; nor does the rustic put into a distinct thought the truth that to raise double the weight he must put forth twice the effort; but in each there is a tacit assumption to this effect, as becomes manifest on calling it in question. So that, in respect of these and other simple mechanical actions, there exist unconsciously-formed preconceptions. And just as the geometrical truths presented in a rude way by the relations among surrounding objects, are not overtly recognized until there is some familiarity with straight lines, and diagrams made of them; so, until linear measures, long used, have led to the equal-armed lever, or scales, and thus to the notion of equal units of force, this mechanical preconception cannot rise into definiteness. Nor after it has risen into definiteness does it for a long time reach the form of a consciously-held cognition; for neither the village huxter nor the more cultivated druggist in the town, recognizes the general abstract truth that, when uninterfered with, equi-multiples of causes and their effects are necessarily connected. But now observe that this truth, acted upon with more or less distinct consciousness of it by the man of science, and perfected by him through analysis and abstraction, is thus perfected only as the last step in its evolution. This definite cognition is but the finished form of a consciousness long in preparation—a con-

sciousness the body of which is present in the brute, takes some shape in the primitive man, reaches greater definiteness in the semi-civilized, becomes afterwards an assumption distinct though not formulated, and takes its final development only as it rises into a consciously-accepted axiom. Just as there is a continuous evolution of the nervous system, so is there a continuous evolution of the consciousness accompanying its action ; just as the one grows in volume, complexity, and definiteness, so does the other ; and just as necessary as the earlier stages are to the later in the one case, are they in the other. To suppose that the finished conceptions of science can exist without the unfinished common knowledge which precedes them, or this without still earlier mental acquisitions, is the same thing as to suppose that we can have the correct judgments of the adult without passing through the crude judgments of the youth, the narrow, incoherent ones of the child, and the vague, feeble ones of the infant. So far is it from being true that the view of physical axioms held by me, is one which bases cognitions on some other source than experience, it asserts experience to be the only possible source of these, as of other cognitions ; but it asserts, further, that not simply is the consciously-acquired experience of the present needful, but that *for the very possibility of gaining it* we are indebted to the accumulation of all past experiences. Not I, but my antagonists, are really chargeable with accepting the ancient *à priori* view ; since, without any explanation of them or justification of them, they posit as unquestionable the assumptions underlying every experiment and the conclusion drawn from it. The belief in physical causation, assumed from moment to moment as necessary in every experiment and in all reasoning from it, is a belief which, if not justified by the hypothesis above set forth, is tacitly asserted as an *à priori* belief. Contrariwise, my own position is one which affiliates all such beliefs upon experiences acquired during the whole past ; which alleges those experiences as the only warrant for them ; which asserts that during the converse between the mind and its environment, necessary

connexions in Thought, such as those concerning Space, have resulted from infinite experiences of corresponding necessary connexions in Things; and that, similarly, out of perpetual converse with the Forces manifested to us in Space, there has been a progressive establishment of internal relations answering to external relations, in such wise that there finally emerge as physical axioms, certain necessities of Thought which answer to necessities in Things.

I need scarcely say that I have taken the trouble of making my comments on your letter, and of writing this further exposition, with a view to their ulterior use.

I am, &c.,

HERBERT SPENCER.

APPENDIX C.

(TO REPLIES TO CRITICISMS.)

SUMMARY OF RESULTS

THOSE who deny a general doctrine enunciated by Mayer as the basis of his reasonings, habitually assumed by Faraday as a guiding principle in drawing his conclusions, distinctly held by Helmholtz, and tacitly implied by Sir John Herschel—those, I say, who deny this general doctrine and even deride it, should be prepared with clear and strong reasons for doing this. Having been attacked, not in the most temperate manner, for enunciating this doctrine and its necessary implications in a specific form, I have demanded such reasons. Observe the responses to the demand.

1. The *British Quarterly Reviewer* quoted for my instruction the *dictum* of Professor Tait, that “Natural Philosophy is an experimental, and not an intuitive science. No *à priori* reasoning can conduct us demonstratively to a single physical truth.” Thereupon I inquired what Professor Tait meant “by speaking of ‘physical *axioms*,’ and by saying that the cultured are enabled ‘to see *at once* their *necessary truth*?’ ”

No reply.

2. Instead of an answer to the question, how this intuition of necessity can be

alleged by Professor Tait consistently with his other doctrine, the Reviewer quotes, as though it disposed of my question, Professor Tait's statement that "as the properties of matter might have been such as to render a totally different set of laws axiomatic, *these laws* [of motion] *must be considered as resting on convictions drawn from observation and experiment, and not on intuitive perception.*" Whereupon I inquired how Professor Tait knows that "the properties of matter *might have been*" other than they are. I asked how it happened that his intuition concerning things *as they are not*, is so certain that, by inference from it, he discredits our intuitions concerning things *as they are*

No reply : Professor Tait told, *à propos* of my question, a story of which no one could discover the application; but, otherwise, declined to answer. Nor was any answer given by his disciple.

3. Further, I asked how it happened that Professor Tait accepted as bases for Physics, Newton's Laws of Motion; which were illustrated but not *proved* by Newton, and of which no *proofs* are supplied by Professor Tait, in the *Treatise on Natural Philosophy*. I went on to examine what conceivable *à posteriori* warrant there could be if there

was no warrant *à priori*; and I pointed out that neither from terrestrial nor from celestial phenomena could the First Law of Motion be deduced without a *petitio principii*.....

No reply: the Reviewer characterized my reasoning as "utterly erroneous" (therein differing entirely from two eminent authorities who read it in proof); but beyond so characterizing it he said nothing.

4. To my assertion that Newton gave no proof of the Laws of Motion, the Reviewer rejoined that "the whole of the *Principia* was the proof." On which my comment was that Newton called them "axioms," and that axioms are not commonly supposed to be proved by deductions from them

The Reviewer quotes from one of Newton's letters a passage showing that though he called the Laws of Motion "axioms," he regarded them as principles "made general by induction;" and that therefore he

could not have regarded them as *à priori*.

5. In rejoinder, I pointed out that whatever conception Newton may have had of these "axioms," he explicitly and distinctly excluded them from the class of "hypotheses." Hence I inferred that he did not regard the whole of the *Principia* as the proof, which the Reviewer says it is; since an assumption made at the outset, to be afterwards justified by the results of assuming it, is an "hypothesis".....

No reply.

6. Authority aside, I examined on its merits the assertion that the Laws of Motion are, or can be, proved true by the ascertained truth of astronomical predictions; and showed that the process of verification itself assumed those Laws.....

No reply.

7. To make still clearer the fact that ultimate physical truths are, and must be, accepted as *à priori*, I pointed out that in every experiment the physicist tacitly assumes a relation between cause and effect, such that, if one unit of cause produces its unit of effect, two units of the cause will produce two units of the effect; and I argued that this general assumption included the special assumption asserted in the Second Law of Motion

No reply: that is to say, no endeavour to show the untruth of this statement, but a

quibble based on my omission of the word "proportionality" in places where it was implied, though not stated.

8. Attention was drawn to a passage from Sir John Herschel's *Discourse on the Study of Natural Philosophy*, in which the "proportionality of the effect to its cause in all cases of *direct unimpeded action*" is included by him among "the characters of that relation which we intend by cause and effect;" and in which this assumption of proportionality is set down as one preceding physical exploration, and not as one to be established by it

No reply.

9. Lastly, a challenge to prove this proportionality. "It is required to establish the truth that there is proportionality between causes and effects, *by a process which nowhere assumes* that if one unit of force produces a certain unit of effect, two units of such force will produce two units of such effect."

No reply.

Thus on all these essential points my three mathematical opponents allow judgment to go against them by default. The attention of readers has been drawn off from the main issues by the discussion of side issues. Fundamental questions have been evaded, and new questions of subordinate kinds raised.

What is the implication? One who is able to reach and to carry the central position of his antagonist, does not spend

his strength on small outposts. If he declines to assault the stronghold, it must be because he sees it to be impregnable.

The trouble I have taken to meet criticisms and dissipate misapprehensions, I have taken because the attack made on the special doctrine defended, is part of an attack on the ultimate doctrine underlying the deductive part of *First Principles*—the doctrine that the quantity of existence is unchangeable. I agree with Sir W. Hamilton that our consciousness of the necessity of causation, results from the impossibility of conceiving the totality of Being to increase or decrease. The proportionality of cause and effect is an implication: denial of it involves the assertion that some quantity of cause has disappeared without effect, or some quantity of effect has arisen without cause. I have asserted the *a priori* character of the Second Law of Motion, *under the abstract form in which it is expressed*, simply because this, too, is an implication, somewhat more remote, of the same ultimate truth. And my sole reason for insisting on the validity of these intuitions, is that, on the hypothesis of Evolution, absolute uniformities in things have produced absolute uniformities in thoughts; and that necessary thoughts represent infinitely-larger accumulations of experiences than the observations, experiments, and reasonings of any single life.

XII.

TRANSCENDENTAL PHYSIOLOGY.

[FROM THE NATIONAL REVIEW OF OCTOBER, 1857.]

TRANSCENDENTAL PHYSIOLOGY.*

IN Mathematics, the Transcendental Analysis is one which, passing beyond those particular relations of numbers dealt with by arithmetic, and passing beyond those general numerical relations which form the subject-matter of ordinary algebra, concerns itself with the still higher generalities underlying these general relations. The title Transcendental Anatomy is used to distinguish that division of biological science which treats, not of the structure of individual organisms, but of the general principles of structure common to vast and varied groups of organisms,—the unity of plan discernible throughout multitudinous genera and orders which are widely different in appearance. And here, under the head of Transcendental Physiology, we purpose putting together sundry laws of development and function which apply, not to particular kinds or classes of organisms, but to

* This essay, which was first published in the *National Review* for 1857, under the title of "The Ultimate Laws of Physiology," was contained in the first series of reprinted essays, published in December of that year. From the American reprint of the first and second series of essays, rearranged, it was omitted. The English edition being out of print, and the American edition alone current here, this essay is, and has been for these ten years, inaccessible. I now add it to this second edition of the third series, because, besides presenting in their original forms certain of the general views afterwards elaborated in *First Principles*, it contains some other general views of importance.

all organisms : laws, some of which have not, we believe, been hitherto enunciated.

By way of unobtrusively introducing the general reader to this highest class of biological truths, let us begin by briefly noticing one or two with which he is already familiar. Take first, the relation between the activity of an organ and its growth. This is a universal relation. It holds, not only of a bone, a muscle, a nerve, an organ of sense, a mental faculty ; but of every gland, every viscus, every element of the body. It is seen, not in man only, but in each animal in which we have adequate opportunity of tracing it ; and not in animals only, but in plants. Always providing that the performance of function is not so excessive as to produce disorder, or exceed the repairing powers either of the system at large or of the particular agencies by which nutriment is brought to the organ—always providing this, it is a law of organized bodies that, other things equal, development varies as function. On this law are based all maxims and methods of right education, intellectual, moral, and physical ; and when statesmen are wise enough to see it, this law will be found to underlie all right legislation.

Another of these truths which are co-extensive with the organic creation, is that of hereditary transmission. It is not, as commonly supposed, that hereditary transmission is exemplified merely in the perpetuation of the family peculiarities seen either in immediate or remote progenitors. Nor does the law of hereditary transmission comprehend only such more general facts as that modified plants or animals become the parents of permanent varieties ; and that new kinds of wheat or potatoes, new breeds of sheep or cattle, new races of men, have been thus originated. These are but minor

exemplifications of the law. Understood in its entirety, the law is, that each plant or animal produces others of like kind with itself: the likeness of kind consisting not so much in the repetition of individual traits as in the assumption of the same generic structure. This truth has become by daily illustration so familiar as almost to have lost its significance. That wheat produces wheat, —that existing oxen are descended from ancestral oxen, —that every unfolding organism ultimately takes the form of the class, order, genus, and species from which it sprang; is a fact which, by force of repetition, has assumed in our minds almost the character of a necessity. It is in this, however, that the law of hereditary transmission is principally displayed: the phenomena commonly referred to it being quite subordinate manifestations. And the law, as thus understood, is universal. Not forgetting the apparent, but only apparent, exceptions presented by the strange class of phenomena known as "alternate generation," the truth that like produces like is common to all races of organisms.

Let us take next a universal physiological law of a less conspicuous kind; and one of but recent establishment. To the ordinary observer, it seems that the multiplication of organisms proceeds in a variety of ways. He sees that the young of the higher animals are born with a general likeness to their parents; that birds lay eggs, which they foster and hatch; that fish deposit spawn and leave it. Among plants, he finds that while in some cases new individuals grow from seeds only, in others, as in that of the potato, they also grow from tubers; that by certain plants layers are sent out, take root, and develop new individuals; and that many plants are produced from cuttings and buds. Further,

in the mould that makes its appearance on stale food, and the infusoria that soon swarm in water exposed to air and light, he sees a mode of generation which, seeming, as it does, inexplicable, he is apt to consider "spontaneous." The reader of popular science thinks the modes of reproduction still more various. He discovers that whole tribes of creatures multiply by gemmation—by a development from the body of the parent of buds which, after unfolding into the parental form, separate and lead independent lives. He learns that among the microscopic forms of both animal and vegetable life, the ordinary mode of multiplication is by spontaneous fission—by a splitting-up of the original individual into two or more individuals, which by and by severally repeat the process. Still more remarkable are the cases in which, as in the *Aphis*, an egg gives rise to an imperfect female, from which other imperfect females are born viviparously, grow, and in their turns bear other imperfect females; and so on for eight, ten, or more generations, until finally, perfect males and females are viviparously produced. But now under all these, and many more, modified modes of multiplication, the advanced physiologist finds that there is at bottom complete uniformity. The starting-point, not only of every higher animal or plant, but of every clan of organisms which by fission or gemmation have sprung from a single organism, is always a spore, seed, or ovum. The millions of infusoria or of aphides which, by subdivision or gemmation, have proceeded from one individual; the countless plants that have been successively propagated from one original plant by cuttings or tubers; are, in common with the highest creature, primarily descended from a fertilised germ. And in all cases—in the humblest alga as in the oak, in the protozoon as in the

mammal—this fertilised germ results from the union of the contents of two cells. Whether, as in the lowest forms of life, these two cells are of seemingly identical nature; or whether, as in higher forms, they are distinguishable into sperm-cell and germ-cell; it remains throughout true that from their combination results the mass out of which is evolved a new organism or new series of organisms. That this law is without exception we are not prepared to say; for in the case of the *Aphis* certain experiments seem to imply that under special conditions the descendants of an original individual may continue multiplying for ever, without further fecundation; and it may be so in other cases. But we know of no case in Nature where it *actually is* so; for although there are certain plants whose seeds have never yet been seen, it is more probable that our observations are in fault than that these plants are exceptions. And until we find undoubted exceptions the above stated induction must stand. Here, then, we have another of the truths of Transcendental Physiology: a truth which, so far as we know, *transcends* all distinctions of genus, order, class, kingdom, and applies to every living thing whatever.

Yet another generalisation of like universality is that which formulates the process of organic development. To the uninitiated this seems variable. No obvious parallelism exists between the unfolding of a plant and the unfolding of an animal. There is no manifest similarity between the development of a mammal, which proceeds without break from its first to its last phase, and that of an insect, which is divided into strongly-marked stages—egg, larva, pupa, imago. Nevertheless it is now an established fact, that all organisms are evolved after one general method. At the outset the germ of every plant or animal is homogeneous; and

every advance towards maturity is an advance towards greater heterogeneity. Every organized thing commences as an almost structureless mass, and progresses towards its ultimate complexity by the establishment of distinctions upon distinctions,—by the divergence of tissues from tissues and organs from organs. Here, then, we have yet another biological law of transcendental generality.

Having thus indicated the scope of Transcendental Physiology by presenting its leading truths, we have prepared the way for the considerations that are to follow.

And first, returning to the last of the great generalisations above given, let us inquire more nearly how this change from the homogeneous to the heterogeneous is carried on. Usually it is said to result from successive differentiations. This, however, we conceive to be an incomplete account of the process. As every physiologist knows, there occurs, during the evolution of an organism, not only separation of parts, but coalescence of parts. There is not only segregation, but aggregation. The heart, at first a large, long, pulsating blood-vessel, by and by twists upon itself and becomes integrated. The layer of bile-cells constituting the rudimentary liver, do not simply diverge from the surface of the intestine on which they at first lie; but they simultaneously consolidate into a definite organ. And the gradual concentration seen in these and other cases forms a part of the developmental process: a part which, though more or less recognized by Milne-Edwards and others, does not seem to have been included as an essential element in the conception of the developmental process.

This progressive integration, which is seen alike in

tracing up the several stages passed through by every embryo, and in ascending from the lower organic forms to the higher, may be most conveniently studied under several heads. Let us consider first what may be called *longitudinal integration*.

The lower *Annulosa*—worms, myriapods, &c.—are characterized by the great number of segments of which they consist, reaching in some cases to several hundreds ; but as we advance to the higher *Annulosa*—centipedes, crustaceans, insects, spiders—we find this number greatly reduced, down to twenty-two, thirteen, and even fewer ; and accompanying this there is a shortening or integration of the whole body, reaching its extreme in crab and spider. Similarly if we watch the development of an individual crustacean or insect. The thorax of a lobster, which, in the adult, forms, with the head, one compact box containing the viscera, is made up by the union of a number of segments which in the embryo were separable. The thirteen distinct divisions seen in the body of a caterpillar, become further integrated in the butterfly : several segments are consolidated to form the thorax, and the abdominal segments are more aggregated than they originally were. The like truth is seen when we pass to the internal organs. In the inferior annulose forms, and in the larvæ of the higher ones, the alimentary canal consists either of a tube that is uniform from end to end, or else bulges into a succession of stomachs, one to each segment ; but in the developed forms there is a single well-defined stomach. In the nervous, vascular, and respiratory systems a parallel concentration may be traced. Again, in the development of the *Vertebrata* we have sundry examples of longitudinal integration. The coalescence of several segments to form the skull is one instance of it. It is further illustrated

in the *os coccygis*, which results from the fusion of a number of caudal vertebræ. And in the consolidation of the sacral vertebræ of a bird it is also well exemplified.

That which we may distinguish as *transverse integration*, is clearly illustrated among the *Annulosa* in the development of the nervous system. Leaving out those most degraded forms which do not present distinct ganglia, it is to be observed that the lower annulose animals, in common with the larvæ of the higher, are severally characterized by a double chain of ganglia running from end to end of the body; while in the more perfectly formed annulose animals this double chain becomes more or less completely united into a single chain. Mr. Newport has described the course of this concentration as exhibited in insects; and by Rathke it has been traced in the crustaceans. In the early stages of the *Astacus fluviatilis*, or common cray-fish, there is a pair of separate ganglia to each ring. Of the fourteen pairs belonging to the head and thorax, the three pairs in advance of the mouth consolidate into one mass to form the brain, or cephalic ganglion. Meanwhile out of the remainder, the first six pairs severally unite in the median line, while the rest remain more or less separate. Of these six double ganglia thus formed, the anterior four coalesce into one mass; the remaining two coalesce into another mass; and then these two masses coalesce into one. Here we see longitudinal and transverse integration going on simultaneously; and in the highest crustaceans they are both carried still further. The *Vertebrata* clearly exhibit this transverse integration in the development of the generative system. The lowest of the *mammalia*—the *Monotremata*—in common with birds, to which they are in many respects allied, have oviducts which towards their lower extremities are di-

lated into cavities, severally performing in an imperfect way the function of a uterus. "In the *Marsupialia* there is a closer approximation of the two lateral sets of organs on the median line; for the oviducts converge towards one another and meet (without coalescing) on the median line; so that their uterine dilatations are in contact with each other, forming a true 'double uterus.' . . . In many of the *Rodentia* the uterus still remains divided into two lateral halves; whilst in others these coalesce at their lower portions, forming a rudiment of the true 'body' of the uterus in the human subject. This part increases at the expense of the lateral 'cornua' in the higher herbivora and carnivora; but even in the lower quadrumana the uterus is somewhat cleft at its summit."* And this process of transverse integration, which is still more striking when observed in all its details, is accompanied by parallel, though less important, changes in the opposite sex. . Once more, in the increasing commissural connection of the cerebral hemispheres, which, though separate in the lower vertebrata, become gradually more united in the higher, we have another instance. And further ones of a different order, but of like general implication, are supplied by the vascular system.

Now it seems to us that the various forms of integration here exemplified, which are commonly set down as so many independent phenomena, ought to be generalized, and included in the formula describing the process of development. The fact that in an adult crab, numerous pairs of ganglia originally separate have become fused into a single mass, is a fact only second in significance to the differentiation of its alimentary canal into stomach and intestine. That in the higher *Annulosa*,

* Carpenter's Prin. of Comp. Phys. p. 617.

a single heart replaces the string of rudimentary hearts constituting the dorsal blood-vessel in the lower *Annulosa*, (reaching in one species to the number of one hundred and sixty,) is a truth as much needing to be comprised in the history of evolution, as is the formation of a respiratory surface by an involution of the skin. A right conception of the genesis of a vertebral column, includes not only the differentiations from which result the *chorda dorsalis* and the vertebral segments imbedded in it; but quite as much, or more, it includes the coalescence of numerous vertebral processes with their respective vertebral bodies. The changes in virtue of which several things become one, demand recognition equally with those in virtue of which one thing becomes several. Evidently, then, the current statement which ascribes the developmental progress to differentiations alone, is incomplete. Adequately to express the facts, we must say that the transition from the homogeneous to the heterogeneous is carried on by differentiations and subordinate integrations.

It may not be amiss here to ask—What is the meaning of these integrations? The evidence seems to show that it is in some way dependent upon community of function. The eight segments which coalesce to make the head of a centipede, have the common purpose of protecting the cephalic ganglia, and affording a solid fulcrum for the jaws, &c.; as also have the many bones which unite to form a vertebrate's skull. In the consolidation of the several pieces which constitute a mammalian pelvis, and in the ankylosis of from ten to nineteen vertebræ in the sacrum of a bird, we have kindred instances of the integration of parts which transfer the weight of the body to the legs. The more or less complete fusion of the tibia with the fibula and the radius

with the ulna in the ungulated mammals, whose habits do not require any rotation of the limbs, is a fact of like meaning. And all the instances lately given—the concentration of ganglia, the replacement of many pulsating blood-sacs by fewer and finally by one, the fusion of two uteri into a single uterus—have the same implication. Whether, as in some cases, the integration is a mere consequence of the continued growth which eventually brings into contact adjacent parts performing similar duties; or whether, as in other cases, there is an actual approximation of these parts before their union; or whether, as in yet other cases, the integration is of that indirect kind which arises when, out of a number of like organs, one, or a group, discharges an ever-increasing share of the common function, and so grows while the rest dwindle and disappear;—the general fact remains the same, that there is a tendency to the unification of parts having similar duties.

The tendency, however, has limiting conditions; the recognition of which will explain some apparent exceptions. Let us take instances. In the human foetus, as in the lower vertebrata, the eyes are placed one on each side of the head. In the process of evolution they become relatively nearer, and at birth are in front; though they are still, in the European infant as in the adult savage, proportionately further apart than they afterwards become. But this approximation shows no signs of further increase. Two reasons for this suggest themselves. Inasmuch as the eyes, being directed to the same object, have a common function, they tend to become one; but inasmuch as they are directed to different sides of the same object, and so have different functions, they tend to remain two; and possibly their ultimate positions depend on the balance of these

opposing tendencies. A more probable explanation however seems to be, that the interposed structures do not permit any nearer approach. For the orbits of the eyes to be brought closer together, would imply a decrease in the size of the olfactory chambers; and as these are probably not larger than is demanded by their present functional activity, no decrease can take place. Again, if we trace up the external organs of smell through fishes,* reptiles, ungulate mammals and unguiculate mammals, to man, we perceive a general tendency to coalescence in the median line; and on comparing the savage with the civilized, or the infant with the adult, we see this approach of the nostrils carried furthest in the most perfect of the species. But since the septum which divides them has the function both of an evaporating surface for the lachrymal secretion, and a ramifying surface for a nerve ancillary to that of smell, it does not disappear entirely: the integration remains incomplete. These and other like instances do not however militate against the hypothesis. They merely show that the tendency is sometimes antagonized by other tendencies. Bearing in mind which qualification, we may say, that as differentiation of parts is connected with difference of function, so there appears to be a connection between integration of parts and sameness of function.

Intimately related to the general truth that the evolution of all organisms is carried on by combined differentiations and integrations, is another general truth which physiologists appear not to have recognized. When we

* With the exception, perhaps, of the Myxinoid fishes, in which what is considered as the nasal orifice is single, and on the median line. But seeing how unusual is the position of this orifice, it seems questionable whether it is the true homologue of the nostrils.

look at the organic creation in its *ensemble*, we may observe that, on passing from lower to higher forms, we pass to forms which are not only characterized by a greater differentiation of parts, but are at the same time more widely differentiated from the surrounding medium. This truth may be contemplated under various aspects.

In the first place, it is illustrated in *structure*. The advance from the homogeneous to the heterogeneous, itself involves an increasing distinction from the inorganic world. In the lowest *Protozoa*, as that mere speck of jelly the *Protogenes*, we have a homogeneity approaching to that of water, or earth; and the ascent to organisms of greater and greater complexity of structure, is an ascent to organisms that are in that respect more strongly contrasted with the structureless environment.

In *form*, again, we see the same fact. A general characteristic of inorganic matter is its indefiniteness of form; and this is also a characteristic of the lower organisms as compared with the higher. Speaking generally, plants are less definite than animals, both in shape and size—admit of greater modifications from variations of position and nutrition. Among animals, the *Amæba* and its allies are not only structureless but amorphous: the form is never specific, and is constantly changing. Of the organisms resulting from the aggregation of amœba-like creatures, we find that while some, as the *Foraminifera*, assume a certain definiteness of form, in their shells at least; others, as the Sponges, are very irregular. In the Zoophytes and in the *Polyzoa*, we see compound organisms, most of which have a mode of growth not more determinate than that of plants. Among the higher animals, however, not only is the

mature shape of each species very definite, but the individuals of each species differ little in size.

A parallel increase of contrast is likewise seen in *chemical composition*. With but few exceptions, and those only partial ones, the lowest animal and vegetal forms are inhabitants of the water; and water is almost their sole constituent. Desiccated *Protophyta* and *Protozoa* shrink into mere dust; and among the *Acalephes* there are but a few grains of solid matter to a pound of water. The higher aquatic plants, in common with the higher aquatic animals, possessing as they do much greater tenacity of substance, also contain a greater proportion of the organic elements; and so are chemically more unlike their medium. And when we pass to the superior classes of organisms—land plants and animals—we find that, chemically considered, they have little in common either with the earth on which they stand or the air which surrounds them.

In *specific gravity*, too, the like is seen. The simplest forms, in common with the spores and gemmules of higher ones, are as nearly as may be of the same specific gravity as the water in which they float; and though it cannot be said that among aquatic creatures superior specific gravity is a standard of general superiority, yet we may fairly say that the superior orders of them, when divested of the appliances by which their specific gravity is regulated, differ more from water in their relative weight than do the lowest. In terrestrial organisms the contrast becomes extremely marked. Trees and plants, in common with insects, reptiles, mammals, birds, are all of a specific gravity considerably less than the earth and immensely greater than the air.

Yet further, we see the law similarly fulfilled in respect of *temperature*. Plants generate but an extremely small

quantity of heat, which is to be detected only by very delicate experiments; and practically they may be considered as having the same temperature as their environment. The temperature of aquatic animals is but little above that of the surrounding water: that of the invertebrata being mostly less than a degree above it, and that of fishes not exceeding it by more than two or three degrees, save in the case of some large red-blooded fishes, as the tunny, which exceed it by nearly ten degrees. Among insects, the range is from two to ten degrees above that of the air: the excess varying according to their activity. The heat of reptiles is from four to fifteen degrees more than the heat of their medium. While mammals and birds maintain a heat which continues almost unaffected by external variations, and is often greater than that of the air by seventy, eighty, ninety, and even a hundred degrees.

Once more, in greater *self-mobility* a progressive differentiation is traceable. The especial characteristic by which we distinguish dead matter is its inertness: some form of independent motion is our most general test of life. Passing over the indefinite border-land between the animal and vegetal kingdoms, we may roughly class plants as organisms which, while they exhibit that species of motion implied in growth, are not only devoid of locomotive power, but with some unimportant exceptions are devoid of the power of moving their parts in relation to each other; and thus are less differentiated from the inorganic world than animals. Though in those microscopic *Protophyta* and *Protozoa* inhabiting the water—the spores of algæ, the gemmules of sponges, and the infusoria generally—we see locomotion produced by ciliary action; yet this locomotion, while rapid relatively to their size, is absolutely slow. Of the

Cœlenterata, a great part are either permanently rooted or habitually stationary; and so have scarcely any self-mobility but that implied in the relative movements of parts; while the rest, of which the common jelly-fish will serve as a sample, have mostly but little ability to move themselves through the water. Among the higher aquatic *Invertebrata*,—cuttle-fishes and lobsters, for instance,—there is a very considerable power of locomotion; and the aquatic *Vertebrata* are, considered as a class, much more active in their movements than the other inhabitants of the water. But it is only when we come to air-breathing creatures that we find the vital characteristic of self-mobility manifested in the highest degree. Flying insects, mammals, birds, travel with a velocity far exceeding that attained by any of the lower classes of animals; and so are more strongly contrasted with their inert environment.

Thus, on contemplating the various grades of organisms in their ascending order, we find them more and more distinguished from their inanimate media in *structure*, in *form*, in *chemical composition*, in *specific gravity*, in *temperature*, in *self-mobility*. It is true that this generalization does not hold with complete regularity. Organisms which are in some respects the most strongly contrasted with the environing inorganic world, are in other respects less so than inferior organisms. As a class, mammals are higher than birds; and yet they are of lower temperature, and have smaller powers of locomotion. The stationary oyster is of higher organization than the free-swimming medusa; and the cold-blooded and less heterogeneous cod, is quicker in its movements than the warm-blooded and more heterogeneous sloth. But the admission that the several aspects under which this increasing contrast shows itself bear a variable ratio

to each other, does not conflict with the general truth enunciated. Contemplating the facts in the mass, it cannot be denied that the successively higher grades of organisms are severally characterized, not only by a greater differentiation of parts, but also by a greater differentiation from the surrounding medium in sundry other physical attributes. It would seem that this peculiarity has some necessary connection with superior vital manifestations. One of those lowly gelatinous forms, so transparent and colourless as to be with difficulty distinguished from the water it floats in, is not more like its medium in chemical, mechanical, optical, thermal, and other properties, than it is like in the passivity with which it submits to all the actions brought to bear upon it; while the mammal does not more widely differ from inanimate things in these properties, than it differs in the activity with which it meets surrounding changes by compensating changes in itself. And between these two extremes, we shall observe a constant ratio between these two kinds of contrast. Whence we may say, that in proportion as an organism is physically like its environment it remains a passive partaker of the changes going on in its environment; while in proportion as it is endowed with powers of counteracting such changes, it exhibits greater unlikeness to its environment.

Thus far we have treated our subject inductively, in conformity with established usage; but much may be done in this and other departments of biologic inquiry by pursuing the deductive method. The generalizations at present constituting the science of physiology, both general and special, have been reached *a posteriori*; but certain fundamental data have now been discovered, starting

from which, we may reason our way *à priori*, not only to some of the truths that have been ascertained by observation and experiment, but also to some others. The possibility of such *à priori* conclusions will be at once recognized on considering a few familiar cases.

Physiologists and chemists have shown that a necessary condition to vital activity in animals is oxidation. The oxygen requisite for this is contained in the surrounding medium—air or water, as the case may be. If the organism be some minute protozoon, mere contact of its external surface with the oxygenated medium secures the requisite oxidation; but if the organism is bulky, and so exposes a surface that is small in proportion to its mass, any considerable oxidation cannot be thus secured. One of two things is therefore implied. Either this bulky organism, receiving no oxygen but that absorbed through its integument, must possess but little vital activity; or else, if it possesses much vital activity, there must be some extensive ramified surface, internal or external, through which adequate aeration may take place—a respiratory apparatus. That is to say, lungs, or branchiæ, or their equivalents, are predicable *à priori* as possessed by all active creatures of any size.

Similarly with respect to nutriment. There are *entozoa* which, living in the insides of other animals and being constantly bathed by nutritive fluids, absorb a sufficiency through their outer surfaces; and so have no need of stomachs and do not possess them. But all other animals, inhabiting media that are not in themselves nutritive, but only contain masses of food here and there, must have appliances by which these masses of food may be utilized. Evidently mere external contact of a solid organism with a solid portion of nutriment, could not result in the assimilation of it in any moderate time,

if at all. To achieve this end, there must be both a solvent or macerating action, and an extended surface fit for containing and imbibing the dissolved products: that is, there must be a digestive cavity. Thus, given the ordinary conditions of animal life, and the possession of stomachs by all creatures living under these conditions may be deductively known.

Carrying out the train of reasoning still further, we may infer the existence of a vascular system, or something equivalent to it, in all creatures of any size and activity. In a comparatively small inert animal, such as the hydra, which consists of little more than a sac having a double wall—an outer layer of cells forming the skin, and an inner layer forming the assimilating surface—there is no need for a special apparatus to diffuse through the body the absorbed aliment; for the body is little more than a wrapper to the food it encloses. But where the bulk is considerable, or where the activity is such as to involve much waste and repair, or where both these characteristics exist, there is a manifest necessity for a system of blood-vessels. It is not enough that there be adequately extensive surfaces for assimilation and aeration; for in the absence of any means of conveyance the absorbed elements can be of little or no use to the organism at large. Evidently there must be channels of communication. When, as in the *Medusa*, we find these channels of communication consisting simply of branching canals opening out of the stomach and spreading through the disk; we may know, *à priori*, that such creatures are comparatively inactive: seeing that the nutriment thus partially distributed throughout their bodies is crude and dilute, and that there is no efficient appliance for keeping it in motion. Conversely, when we meet with a creature of considerable size which

displays much vivacity, we may know, *à priori*, that it must have an apparatus for the unceasing supply of concentrated nutriment, and of oxygen, to every organ—a pulsating vascular system.

It is manifest, then, that setting out from certain known fundamental conditions to vital activity, we may deduce from them sundry of the chief characteristics of organized bodies. Doubtless these known fundamental conditions have been inductively established. But in this they do not differ from the ground truths of deductive science in general; all of which are inductions. What we wish to show is, that, given these inductively-established primary facts in physiology, we may with safety draw certain general deductions from them. And, indeed, the legitimacy of such deductions, though not formally acknowledged, is practically recognized in the convictions of every physiologist; as may be readily proved by citing a few illustrations. Thus, were a physiologist to find a creature exhibiting complex and variously co-ordinated movements, and yet having no nervous system; he would be less astonished at the breach of his empirical generalization that all such creatures have nervous systems, than at the disproof of his unconscious deduction that all creatures exhibiting complex and variously co-ordinated movements must have an “internuncial” apparatus by which the co-ordination may be effected. Or were he to find a creature having a rapid circulation and a rapid respiration, but yet showing a low temperature, the proof so afforded that active change of matter was not, as he had inferred from chemical data, the cause of animal heat, would stagger him more than would the exception to the constantly-observed relation between these characteristics. Clearly, then, the *à priori* method already plays

a part in physiological reasoning: if not ostensibly employed as a means of reaching new truths, it is at least privately appealed to for confirmation of truths reached *à posteriori*.

We think, however, that the illustrations above given go far to show that it may to a considerable extent be safely used as an independent instrument of research. The necessities for a nutritive system, a respiratory system, and a vascular system, in all animals of size and vivacity, seem to us legitimately inferable from the conditions to continued vital activity. Given the physical and chemical data, and these structural peculiarities may be deduced with as much certainty as may the hollowness of an iron ball from its power of floating in water.

Let us not, however, be understood as supposing that the more *special* physiological truths can be deductively reached. Our argument by no means implies this. Legitimate deduction presupposes adequate data; and in respect to all the *special* phenomena of organic growth, structure, and function, adequate data are unattainable, and will probably ever remain so. It is only in the case of the more *general* physiological truths, such as those above instanced, where we have something like adequate data, that deductive reasoning becomes possible.

And here we arrive at the point to which the foregoing considerations are introductory. We propose now to show that there are certain still more general attributes of organized bodies, which are deducible from certain still more general attributes of things.

In an essay on "Progress : its Law and Cause," elsewhere published,* we have endeavoured to show that

* In the *Westminster Review* for April, 1857; and reprinted in the first volume of *Essays*, &c.

the transformation of the homogeneous into the heterogeneous, in which all progress, organic or other, essentially consists, is consequent on the production of many effects by one cause—many changes by one force. Having pointed out that this is a law of all things, we proceeded to show deductively that the multiform evolutions of the homogeneous into the heterogeneous—astronomic, geologic, ethnologic, social &c., were explicable as corollaries of this law. And though in the case of organic evolution, lack of data disabled us from specifically tracing out the progressive complications as due to the multiplication of effects; yet, we found sundry indirect evidences that it was so. Now in so far as this conclusion, that organic evolution results from the decomposition of each expended force into several forces, was inferred from the general law previously pointed out, it was an example of deductive physiology. The particular was concluded from the universal.

We here propose in the first place to show, that there is another general truth standing in immediate correlation with the above; and in common with it underlying all forms of progress, and therefore the progress of organisms—a truth which may indeed be considered as taking precedence of it in respect of time, if not in respect of generality. This truth is, that *the condition of homogeneity is a condition of unstable equilibrium*.

The phrase *unstable equilibrium* is one used in mechanics to express a balance of forces of such kind, that the interference of any further force, however minute, will destroy the arrangement previously subsisting, and bring about a totally different arrangement. Thus, a stick poised on its lower end is in unstable equilibrium: however exactly it may be placed in a perpendicular position, as soon as it is left to itself it begins, at first

imperceptibly, to lean on one side, and with increasing rapidity falls into another attitude. Conversely, a stick suspended from its upper end is in stable equilibrium: however much disturbed, it will return to the same position. Our meaning is, then, that the state of homogeneity, like the state of the stick poised on its lower end, is one that cannot be maintained; and that hence inevitably results the first step in its gravitation towards the heterogeneous. Let us take a few illustrations.

Of mechanical ones the most familiar is that of the scales. If they be accurately made and not clogged by dirt or rust, it is impossible to keep a pair of scales perfectly balanced: eventually one scale will descend and the other ascend—they will assume a heterogeneous relation. Again, if we sprinkle over the surface of a fluid a number of equal-sized particles, having an attraction for each other, they will, no matter how uniformly distributed, by and by concentrate irregularly into one or more groups. Were it possible to bring a mass of water into a state of perfect homogeneity—a state of complete quiescence, and exactly equal density throughout—yet the radiation of heat from neighbouring bodies, by affecting differently its different parts, would inevitably produce inequalities of density and consequent currents; and would so render it to that extent heterogeneous. Take a piece of red-hot matter, and however evenly heated it may at first be, it will quickly cease to be so: the exterior cooling faster than the interior, will become different in temperature from it. And the lapse into heterogeneity of temperature, so obvious in this extreme case, takes place more or less in all cases. The action of chemical forces supplies other illustrations. Expose a fragment of metal to air or water, and in course of time it will be coated with a film of

oxide, carbonate, or other compound: that is, its outer parts will become unlike its inner parts. In short, every homogeneous aggregation of matter tends to lose its balance in some way or other—either mechanically, chemically, thermally, or electrically; and the rapidity with which it lapses into a non-homogeneous state is simply a question of time and circumstances. Social bodies illustrate the law with like constancy. Endow the members of a community with equal properties, positions, powers, and they will forthwith begin to slide into inequalities. Be it in a representative assembly, a railway board, or a private partnership, the homogeneity, though it may continue in name, inevitably disappears in reality.

The instability thus variously illustrated becomes still more manifest if we consider its rationale. It is consequent on the fact that the several parts of any homogeneous aggregate are necessarily exposed to different forces—forces that differ either in kind or amount; and being exposed to different forces they are of necessity differently modified. The relations of outside and inside, and of comparative nearness to neighbouring sources of influence, imply the reception of influences that are unlike in quantity or quality or both; and as a corollary from the law of “the conservation of force,” it follows that unlike changes will be produced in the parts thus dissimilarly acted upon. Thus the unstable equilibrium of any homogeneous aggregate can be shown both inductively and deductively.

And now let us consider the bearing of this general truth on the evolution of organisms. The germ of a plant or animal is one of these homogeneous aggregates whose equilibrium is unstable. But it has not simply the ordinary instability of homogeneous aggre-

gations: it has something more. For it consists of units that are themselves specially characterized by instability. The constituent atoms of organic matter are distinguished by the feebleness of the affinities which hold their component elements together: they are extremely sensitive to heat, light, electricity, and the chemical actions of foreign elements; that is—they are peculiarly liable to be modified by disturbing forces. Hence then it follows, *à priori*, that a homogeneous aggregation of these unstable atoms will have an excessive tendency to lose its equilibrium. It will have a quite special aptitude to lapse into a non-homogeneous state. It will rapidly gravitate towards heterogeneity.

Moreover, the process must repeat itself in each of the subordinate groups of organic units that are differentiated by the modifying forces. Each of these subordinate groups, like the original group, must gradually, in obedience to the influences acting upon it, lose its balance of parts—must pass from a uniform into a multifiform state. And so on continuously.

Thus, starting from the general laws of things, and the known chemical attributes of organic matter, we may conclude deductively that the homogeneous germs of organisms have a peculiar proclivity towards a non-homogeneous state; which may be either the state we call decomposition or the state we call organization.

Thus far our reasoning brings us to a conclusion only of the most general nature. We merely find that *some* kind of heterogeneity is inevitable; but as yet there is nothing to tell us *what* kind. Besides that *orderly* heterogeneity which distinguishes organisms, there is the *disorderly* or *chaotic* heterogeneity, into which a loose mass of inorganic matter lapses; and at present no

reason has been given why the homogeneous germ of a plant or animal should not lapse into the disorderly instead of the orderly heterogeneity. Let us see whether some light may not be thrown on this point by pursuing still further the line of argument hitherto followed.

We have seen that the instability of homogeneous aggregations in general, and of organic ones in particular, is consequent on the different ways and degrees in which their constituent parts are exposed to the disturbing forces brought to bear on them: they are differently acted upon, and therefore become different. Manifestly, then, a rationale of the special changes which a germ undergoes, must be sought in the particular relations which its several parts bear to each other and to their environment. However it may be masked, we may suspect the fundamental principle of organization to be, that the many like units forming a germ acquire those kinds and degrees of unlikeness which their respective positions entail. But let us speak more specifically.

Take a mass of unorganized but organizable matter—either the body of one of the lowest living forms, or the germ of one of the higher. Consider its circumstances. It is immersed in water or air; or it is contained within a parent organism. Wherever placed, however, its outer and inner parts stand differently related to surrounding agencies—nutriment, oxygen, and the various stimuli. But this is not all. Whether it lies quiescent at the bottom of the water or on the leaf of a plant; whether it moves through the water preserving some definite attitude; or whether it is in the inside of an adult; it equally results that certain parts of its surface are more exposed to surrounding agencies than other parts—in some cases more exposed to light, heat,

or oxygen, and in others to the maternal tissues and their contents. The destruction of its original equilibrium is therefore certain. It may take place in one of two ways. Either the disturbing forces may be such as to overbalance the affinities of the organic elements, in which case there results that chaotic heterogeneity known as decomposition; or, as is ordinarily the case, such changes are induced as do not destroy the organic compounds, but only modify them: the parts most exposed to the modifying forces being most modified. Hence there result those first differentiations which constitute incipient organization. From the point of view thus reached, suppose we look at a few cases: neglecting for the present all consideration of the tendency to assume the hereditary type.

Note first what appear to be exceptions, as the *Amœba*. In this creature and its allies, the substance of the jelly-like body remains throughout life unorganized—undergoes no permanent differentiations. But this fact, which seems directly opposed to our inference, is really one of the most significant evidences of its truth. For what is the peculiarity of this division of the *Protozoa*? Its members undergo perpetual and irregular changes of form—they show no persistent relations of parts. What lately was a portion of the interior is now protruded, and, as a temporary limb, is attached to some object it happens to touch. What is now a part of the surface will presently be drawn, along with the atom of nutriment sticking to it, into the centre of the mass. Thus there is an unceasing interchange of places; and the relations of inner and outer have no permanent existence. But by the hypothesis, it is only in virtue of their unlike positions with respect to modifying forces, that the originally like units of a living mass become

unlike. We must not therefore expect any established differentiations of parts in creatures which exhibit no established differences of position in their parts.

This negative evidence is borne out by abundant positive evidence. When we turn from these proteiform specks of living jelly to organisms having an unchanging distribution of substance, we find differences of tissue corresponding to differences of relative position. In all the higher *Protozoa*, as also in the *Protophyta*, we meet with a fundamental differentiation into cell-membrane and cell-contents, answering to that fundamental contrast of conditions implied by the terms outside and inside. And on passing from what are roughly classed as unicellular organisms to the lowest of those which consist of aggregated cells, we equally observe the connection between structural differences and differences of circumstances. In the Sponge, permeated throughout by currents of sea-water, the absence of definite organization corresponds with the absence of definite unlikeness of conditions. But in the *Thalassicolla*—a transparent, colourless, body found floating passively at the surface of the sea, and consisting essentially of “a mass of cells united by jelly”—there is displayed a rude structure obviously subordinated to the primary relations of centre and surface: in all of its many and important varieties, the parts exhibit more or less of concentric arrangement.

After this primary modification, by which the outer tissues are differentiated from the inner, the next in order of constancy and importance is that by which some part of the outer tissues is differentiated from the rest; and this corresponds with the almost universal fact that some part of the outer tissues is more exposed to certain environing influences than the rest. Here, as

before, the apparent exceptions are extremely significant. Some of the lowest vegetal organisms, as the *Hematococci* and *Protococci*, evenly imbedded in a mass of mucus, or dispersed through the Arctic snow, display no differentiations of surface ; the several parts of the surface being subjected to no definite contrast of conditions. The *Thalassicolla* above mentioned, floating unfixed in the water, and passively rolled about by the waves, successively presents all its sides to the same agencies ; and all its sides are alike. Ciliated spheres like the *Volvox* have no parts of their periphery unlike other parts ; and it is not to be expected that they should have ; seeing that as they revolve in all directions, they do not, in traversing the water, permanently expose any part to special conditions. But when we come to creatures that are either fixed, or while moving preserve definite attitudes, we no longer find uniformity of surface. The gemmule of a Zoophyte, which during its locomotive stage is distinguishable only into outer and inner tissues, no sooner takes root than its upper end begins to assume a different structure from its lower. The free-swimming embryo of an aquatic annelid, being ovate and not ciliated all over, moves with one end foremost ; and its differentiations proceed in conformity with this contrast of circumstances.

The principle thus displayed in the humbler forms of life is visible in the development of the higher ; though being here soon masked by the assumption of the hereditary type, it cannot be traced far. It is, however, conspicuous in those first stages of the higher organisms during which they simulate the lowest. Thus the "mulberry mass" of cells into which a fertilized vertebrate ovum first resolves itself, soon begins to exhibit a difference between the outer and inner parts, answering

to the fundamental difference of circumstances. The peripheral cells, after reaching a more complete development than the interior ones, coalesce into a membrane inclosing the rest; and the cells lying next to these outer ones become aggregated with them, and increase the thickness of the germinal membrane, while the central cells liquefy. Again, one part of the germinal membrane presently becomes distinguishable as the germinal spot; and without asserting that the cause of this is to be found in the unlike relations which the respective parts of the germinal membrane bear to environing influences, it is clear that we have in these unlike relations an element of disturbance tending to destroy the original homogeneity of the germinal membrane. Further, the germinal membrane by and by divides into two layers, internal and external; the one in contact with the liquefied part of the yolk, the other exposed to the surrounding fluids: this contrast of circumstances being in obvious correspondence with the contrast of structure which follows it. Once more, the subsequent appearance of the vascular layer between these mucous and serous layers, as they have been named, admits of a like interpretation. And in this and the various complications that now begin to show themselves, we may see coming into play that general law of the multiplication of effects flowing from one cause, to which the increase of heterogeneity was elsewhere ascribed: * which multiplication of effects is, indeed, co-operative with the action here described; seeing that each newly differentiated part becomes the centre of a new influence acting upon all other parts in different degrees.

Confining our remarks as we do to the most general facts of development, we think that some light is thus

* See Essay on "Progress: its Law and Cause."

thrown on them. That the unstable equilibrium of a homogeneous germ must be destroyed by the unlike exposure of its several units to surrounding influences, is an *à priori* conclusion. And it seems also to be an *à priori* conclusion, that the several units thus differently acted upon, must either be decomposed, or must undergo such modifications of nature as may enable them to live in the respective circumstances they are thrown into. In other words—*they must become adapted to their conditions*. Indeed, we might almost infer as much without going through the foregoing train of reasoning. The superficial organic units (be they the outer cells of a “mulberry mass,” or be they the outer molecules of an individual cell) must assume the function which their position necessitates; and assuming this function, must acquire such character as the performance of it involves. The layer of organic units lying in contact with the yolk must be those through which the yolk is assimilated; and so must be adapted to the assimilative office. On this condition only does the process of organization appear possible. We might almost say that just as some original race of animals, which multiplies and spreads into different regions of the earth, becomes differentiated into several races through the adaptation of each to its conditions of life; so, the originally-homogeneous population of cells arising in a fertilized germ-cell, becomes divided into several populations of cells that grow unlike in virtue of the unlikenesses of their circumstances.

Moreover, it is to be remarked in further proof of our position, that it finds its clearest and most abundant illustrations where the conditions of the case are the simplest and most general—where the phenomena are the least involved: we mean in the production of individual cells. The structures which presently arise round

nuclei in a blastema, and which have in some way been determined by those nuclei as centres of influence, evidently conform to the law ; for the parts of the blastema in contact with the nuclei are differently circumstanced from the parts not in contact with them. Again, the formation of a membrane round each of the masses of granules into which the endochrome of an alga-cell breaks up, is an instance of analogous kind. And should the recently-asserted fact that cells may arise round vacuolæ in a mass of organizable substance, be confirmed, another good example will be furnished ; for such portions of substance as bound these vacant spaces are subject to influences unlike those to which other portions of the substance are subject. If, then, we can thus most clearly trace this law of modification in these primordial processes, as well as in those more complex but analogous ones exhibited in the early changes of an ovum, we have strong reason for thinking that the law is a fundamental one.

But, as already more than once hinted, this principle, understood in the simple form here presented, supplies no key to the detailed phenomena of organic development. It fails entirely to explain generic and specific peculiarities ; and indeed leaves us equally in the dark respecting those more important distinctions by which families and orders are marked out. Why two ova, similarly exposed in the same pool, should become the one a fish, and the other a reptile, it cannot tell us. That from two different eggs placed under the same hen, should respectively come forth a duckling and a chicken, is a fact not to be accounted for on the hypothesis above developed. We have here no alternative but to fall back upon the unexplained principle of hereditary transmission. The capacity possessed by an unorganized

germ of unfolding into a complex adult which repeats ancestral traits in the minutest details, and that even when it has been placed in conditions unlike those of its ancestors, is a capacity impossible for us to understand. That a microscopic portion of seemingly-structureless matter, should embody an influence of such kind that the resulting man will in fifty years after become gouty or insane, is a truth which would be incredible were it not daily illustrated. But though the *manner* in which hereditary likeness, in all its complications, is conveyed, is a mystery passing comprehension, it is quite conceivable that it is conveyed in subordination to the law of adaptation above explained; and we are not without reasons for thinking that it is so. That acquired peculiarities resulting from the adaptation of constitution to conditions, are transmissible to offspring, is an established fact. Such acquired peculiarities consist of differences of structure or composition in one or more of the tissues. That is to say, out of the aggregation of similar organic units composing a germ, the group going to the formation of a particular tissue, will take on the special character which the adaptation of that tissue to new circumstances had produced in the parents. We know this to be a general law of organic modifications. Further, it is the *only* law of organic modifications of which we have any evidence. It is not impossible then that it is the universal law; comprehending not simply those minor modifications which offspring inherit from recent ancestry, but comprehending also those major modifications distinctive of species, genus, order, class, which they inherit from antecedent races of organisms. And thus it *may be* that the law of adaptation is the sole law; applying not only to the differentiation of any race of organisms into several races, but also to the differen-

tiations of the race of organic units composing a germ, into the many races of organic units composing an adult. So understood, the process gone through by every unfolding organism will consist, partly in the direct adaptation of its elements to their several circumstances, and partly in the assumption of characters resulting from analogous adaptations of the elements of all ancestral organisms.

But our argument does not commit us to any such far-reaching speculation as this; which we introduce simply as suggested by it, not involved. All we are here concerned to show, is, that the deductive method aids us in interpreting some of the more general phenomena of development; and this we think we have shown. That all homogeneous aggregations are in unstable equilibrium is a universal truth, from which is deducible the instability of every organic germ. From the known sensitiveness of organic compounds to chemical, thermal, and other disturbing forces, we further infer the *unusual* instability of every organic germ—a proneness far beyond that of other homogeneous aggregations to lapse into a heterogeneous state. And by the same line of reasoning we are led to the additional inference, that the first divisions into which a germ resolves itself, being severally in states of unstable equilibrium, are similarly prone to undergo further changes; and so on continuously. Moreover, we have found it to be equally an *a priori* conclusion that as, in all other cases, the loss of homogeneity is due to the different amounts and kinds of force brought to bear upon the different parts; so, in this case also, difference of circumstances is the primary cause of differentiation. Add to which, that as the several changes undergone by the respective parts thus differently acted upon, are

changes which do not destroy their vital activity, they must be changes which bring that vital activity into subordination to the incident forces—they must be adaptations ; and the like must be in some sense true of all the subsequent changes. Thus by deductive reasoning we get considerable insight into the method of organization. However unable we are, and probably ever shall be, to comprehend the way in which a germ is made to take on the special form of its race, we may yet comprehend the general principles which regulate its first modifications ; and remembering the unity of plan so conspicuous throughout Nature, we may *suspect* that these principles regulate all succeeding modifications.

A controversy now going on among zoologists, opens yet another field for the application of the deductive method. We believe that the question whether there does or does not exist a *necessary correlation* among the several parts of any organism, is determinable *à priori*.

Cuvier, who first asserted this necessary correlation, professed to base his restorations of extinct animals upon it. Geoffroy St. Hilaire and De Blainville from different points of view, contested Cuvier's hypothesis ; and the discussion, which has much interest as bearing on palæontology, has been recently revived under a somewhat modified form : Professors Huxley and Owen being respectively the assailant and defender of the hypothesis.

Cuvier says—"Comparative anatomy possesses a principle whose just development is sufficient to dissipate all difficulties ; it is that of the correlation of forms in organized beings, by means of which every kind of organized being might, strictly speaking, be recognized by a fragment of any of its parts. Every organized

being constitutes a whole, a single and complete system, whose parts mutually correspond and concur by their reciprocal reaction to the same definite end. None of these parts can be changed without affecting the others ; and consequently each taken separately, indicates and gives all the rest." And he then cites sundry illustrations : arguing that the carnivorous form of tooth necessitating a certain action of the jaw, implies a particular form in its condyle ; implies also limbs fit for seizing and holding prey ; and therefore implies claws, a certain structure of the leg-bones, a certain form of shoulder-blade ; and winds up by saying, that "the claw, the scapula, the condyle, the femur, and all the other bones, taken separately, will give the tooth or one another ; and by commencing with any one, he who had a rational conception of the laws of the organic economy could reconstruct the whole animal."

It will be seen, that the method of restoration here contended for, is based upon the alleged physiological necessity of the connection between these several peculiarities. The argument used is, not that a scapula of a certain shape may be recognized as having belonged to a carnivorous mammal because we always find that carnivorous mammals *do* possess such scapulas ; but because they *must* possess them—because carnivorous habits would be impossible without them. And in the above quotation Cuvier asserts that the necessary correlation which he considers so obvious in these cases, exists between all parts of the system : admitting, however, that in consequence of our limited knowledge of physiology, we are unable in many cases to trace this necessary correlation, and are obliged to base our conclusions upon observed coexistences, of which we do not understand the reason, but which we find invariable.

Now Professor Huxley has recently shown that, in the first place, this empirical method, which Cuvier introduces as quite subordinate, and to be used only in aid of the rational method, is really the method which Cuvier habitually employed—the so-called rational method remaining practically a dead letter; and, in the second place, he has shown that Cuvier himself has in several places so far admitted the inapplicability of the rational method, as virtually to surrender it as a method. But more than this, Professor Huxley contends that the alleged law of necessary correlation is not true. Quite admitting the physiological dependence of parts on each other, he denies that it is a dependence of a kind that could not be otherwise. “Thus the teeth of a lion and the stomach of the animal are in such relation that the one is fitted to digest the food which the other can tear; they are physiologically correlated; but we have no reason for affirming this to be a necessary physiological correlation, in the sense that no other could equally fit its possessor for living on recent flesh. The number and form of the teeth might have been quite different from that which we know them to be, and the construction of the stomach might have been greatly altered; and yet the functions of these organs might have been equally well performed.”

Thus much is needed to give our readers an idea of the controversy as it now stands. It is not here our purpose to go more at length into the evidence cited on both sides; we simply wish to show that the question may be settled deductively. Before going on to do this, however, we must briefly notice two collateral points.

In his defence of the Cuvierian doctrine, Professor Owen avails himself of the *odium theologicum*. He attributes to his opponents “the insinuation and masked

advocacy of the doctrine subversive of a recognition of the Higher Mind." Now, saying nothing about the questionable propriety of thus prejudging a point in science, we think this is a somewhat unfortunate accusation. What is there in the hypothesis of *necessary*, as distinguished from *actual*, correlation of parts, which is particularly in harmony with Theism? The maintenance of the *necessity*, whether of sequences or of coexistences, is commonly thought rather a derogation from divine power than otherwise. Cuvier says—"None of these parts can be changed without affecting the others; and consequently, each taken separately, indicates and gives all the rest:" that is to say, in the nature of things the correlation *could not* have been otherwise. On the contrary, Professor Huxley contends we have no warrant for asserting that the correlation *could not* have been otherwise; but have not a little reason for thinking that the same physiological ends might have been differently secured. The one doctrine limits the possibilities of creation; the other denies the implied limit. Which, then, is most open to the charge of covert Atheism?

On the other point to which we have referred, we lean to the opinion of Professor Owen. We agree with him in thinking that where a rational correlation (in the highest sense of the term) can be made out, it affords a better basis for deduction than an empirical correlation ascertained only by accumulated observations. Premising that by rational correlation we do not mean one in which we can trace, or think we can trace, a design, but one of which the negation is inconceivable (and this is the species of correlation which Cuvier's law implies); then we hold that our knowledge of the correlation is of a more certain kind than where it is simply inductive. We think that Professor Huxley, in his anxiety to avoid

the error of making Thought the measure of Things, does not sufficiently bear in mind the fact, that as our notion of necessity is determined by some absolute uniformity pervading all orders of our experiences, it follows that an organic correlation which cannot be conceived otherwise, is guaranteed by a much wider induction than one ascertained only by the observation of organisms. But the truth is, that there are scarcely any organic correlations of which the negation is inconceivable. If we find the skull, vertebræ, ribs, and phalanges of some land-animal as large as an elephant; we may indeed be certain that the legs of this animal were of considerable size—much larger than those of a rat: and our reason for conceiving this correlation as necessary, is that it is based, not upon our experiences of moving organisms alone, but upon all our mechanical experiences relative to masses and their supports. Not only, however, are there few physiological correlations really of this order, but there is danger in pursuing this line of reasoning, in consequence of the liability to include within the class of truly necessary correlations, those which are not such. For instance, there would seem to be a necessary correlation between the eye and the surface of the body. The function of the eye being vision, and light being needful for vision, it might be supposed absolutely requisite that every eye should be external. Nevertheless it is a fact that there are creatures, as the *Cirrhipædia*, whose eyes (not very efficient ones, it may be) are deeply imbedded in the substance of the body. Again, a necessary correlation might be supposed to exist between the dimensions of the mammalian uterus and those of the pelvis. It would appear *à priori* an impossibility that in any species there should exist a well-developed uterus containing a full-

sized foetus, and yet that the arch of the pelvis should be so small as not to allow the foetus to pass. And were the only mammal having a very small pelvic arch a fossil one, it would have been inferred, on the Cuvierian method, that the foetus must have been born in a rudimentary state; and that the uterus must have been proportionally small. But there happens to be a living mammal having a very small pelvic arch—the mole—which presents us with a fact that saves us from this erroneous inference. Anomalous as the fact is, the young of the mole are not born through the pelvic arch at all; but in front of it! Thus, granting that some quite *direct* physiological correlations may be necessary, we see that there is great risk of including among them some that are not such.

With regard to the great mass of the correlations, however, including all the *indirect* ones, we agree with Professor Huxley in denying that they are necessary; and we now propose to show this deductively. Let us begin with an analogy.

Whoever has been through an extensive iron-works, has seen a gigantic pair of shears worked by machinery, and used for cutting in two, bars of iron that are from time to time thrust between its blades. Supposing these blades to be the only visible parts of the apparatus, any one observing their movements (or rather the movement of one, for the other is commonly fixed), will see from the manner in which the angle increases and decreases, and from the curve described by the moving extremity, that there must be some centre of motion round which the action takes place—either a pivot or an external box equivalent to it. This may be regarded as a necessary correlation. Moreover, he might infer that beyond the centre of motion the moving blade was pro-

duced into a lever, to which the power was applied ; but as another arrangement is just possible, this could not be called anything more than a highly probable correlation. If now he went a step further and considered how the alternating movement was given to the lever, he would very likely conclude that it was given by a crank. But if he knew anything of machinery, he would know that it might possibly be given by an eccentric. Or again, he would know that the effect could be achieved by a cam. That is to say, he would see that there was no necessary correlation between the shears and the remoter parts of the apparatus. Take another case. The plate of a printing-press is required to move up and down to the extent of an inch or so ; and it is further requisite that it shall exert its greatest pressure when it reaches the extreme of its downward movement. If now any one will look over the stock of a printing-press maker, he will see half a dozen different mechanical arrangements by which these ends are achieved ; and any clever machinist would tell him that as many more might readily be invented. Further, he would learn from the same authority, that in proportion to the complexity of a machine, is the number of possible arrangements of its other parts which may be made without altering some one part. Should any objection be made to the analogy between a machine and an organism, it cannot be on the ground that the constituent parts of a machine are *less* rigorously correlated than those of an organism ; for the reverse is the case—they are *more* rigorously correlated. An organism will continue to act when it has lost one or two of its limbs, or when one of the lungs is gone ; but the abstraction of such important parts from either of the machines above described would immediately stop it. If, then, there is no necessary

correlation between the various parts of a machine, still less is there between those of an organism.

From a converse point of view the same truth is manifest. Bearing in mind the above analogy, it will be foreseen that an alteration in one part of an organism does not necessarily entail *some one specific set of alterations in the other parts*. Cuvier says—"None of these parts can be changed without affecting the others; and consequently, each taken separately, indicates and gives all the rest." The first of these propositions may pass, but the second, which is alleged to follow from it, is not true; for it implies that "all the rest" can be severally affected in only one way and degree, whereas they can be affected in many ways and degrees. To show this, we must again have recourse to a mechanical analogy.

If you set a brick on end and thrust it over, you can predict with certainty in what direction it will fall, and what attitude it will assume. If, again setting it up, you put another on the top of it, you can no longer foresee with accuracy the results of an overthrow; and on repeating the experiment, no matter how much care is taken to place them in the same positions, and to apply the same degree of force in the same direction, the effects will on no two occasions be exactly alike. And in proportion as the aggregation is complicated by the addition of new and unlike parts, will the results of any disturbance become more varied and incalculable. If, instead of bodies placed in this loose mechanical dependence, you take a group held in more permanent connection—say tied together by strings, as the bones are tied by muscles and ligaments—it will be equally manifest that a disturbing force applied to one part, will affect the others, not in a definite, but in an indefinite way; and that no second group could be made so per-

fectly like the first, that an equivalent disturbance would produce exactly the same results. The like truth is clearly and curiously illustrated in the case of locomotive engines. It is a fact familiar to all mechanical engineers and engine-drivers, that out of a number of engines built as accurately as possible to the same pattern, no two will act in just the same manner. Each will have its idiosyncrasies. The play of actions and reactions will so far differ, that under like conditions each will behave in a somewhat different way ; and every driver has to learn the constitution of his own engine before he can work it to the greatest advantage. In organisms themselves this indefiniteness of mechanical reaction is clearly traceable. Two boys throwing stones will always more or less differ in their attitudes ; as will two billiard-players, or two persons dealing out cards. The familiar fact that each individual has a characteristic gait, illustrates the point still better. The rhythmical motion of the leg is simple, and on the Cuvierian hypothesis should react upon the body in some uniform way. But in consequence of those slight diversities of structure which consist with identity of species, no two individuals make exactly similar movements either of the trunk or the arms : there is always a peculiarity recognizable by their friends.

When we pass to disturbing forces of non-mechanical kinds, the same truth becomes still more conspicuous. Expose several persons to a drenching storm ; and while one will subsequently feel no appreciable inconvenience, another will have a cough, another a catarrh, another an attack of diarrhœa, another a fit of rheumatism. Vaccinate several children of the same age with the same quantity of virus applied to the same part, and the symptoms will not be quite alike in any of them, either

in kind or intensity ; and in some cases the differences will be extreme. The quantity of alcohol which will send one man to sleep will render another unusually brilliant—will make this maudlin, and that irritable—will here excite feelings of kindness, and there feelings of enmity. Opium will produce either drowsiness or wakefulness : so will tobacco. And without further multiplying illustrations familiar to every one, we may repeat what we recently heard asserted by one of our most scientific physicians, that there is scarcely an influence to which the body is subjected, but what may, under different circumstances, produce quite opposite effects.

Now in all these cases—mechanical and other—some force is brought to bear primarily on one part of an organism, and secondarily on the rest ; and according to the doctrine of Cuvier, the rest ought to be affected in quite specific ways. We find it by no means true that they are. The original change produced in one part, does not stand in necessary correlation with every one of the changes produced in the other parts ; nor do these stand in necessary correlations with each other. The functional alteration which the disturbing force causes in the organ directly acted upon, does not involve some *particular set* of functional alterations in the other organs ; but will be followed by one out of various sets. And it is a manifest corollary, that any *structural alteration* which may eventually be produced in the one organ, will not be accompanied by *some particular set of structural alterations* in the other organs : there will be no necessary correlation of forms.

The flaw in Cuvier's principle lies in assuming too specific a mutual dependence between the several parts of an organism. It is doubtless true, as he says, that

“none of these parts can be changed without affecting the others.” And were the members of a species *absolutely* alike in their minutest details, and always in *absolutely* the same constitutional state; then, a change in any part must in every case be followed by one specific set of changes in the rest. But the absence of this absolute similarity vitiates his inference. The fact that no two individuals are exactly alike either in structure or state, involves the fact that the changes produced by any disturbing force will not be alike, but may be totally unlike. Just as delicately poised scales may, when shaken, preponderate either way, in virtue of some quite inappreciable difference: so, the organic equilibrium in two creatures of the same kind may, by the same disturbance, be overthrown in opposite directions, in consequence of those minute unlikenesses which exist in every case. And having had the organic equilibrium thus overthrown in opposite directions, a persistence of the disturbing cause may produce in them quite different sets of permanent organic changes.

Thus Palæontology must depend upon the empirical method. Necessary correlation cannot be substantiated. A fossil species that was obliged to change its food or habits of life, did not of necessity undergo the particular set of modifications exhibited; but, under some slight change of predisposing causes—as of season or latitude—might have undergone some other set of modifications: the determining circumstance being one which, in the human sense, we call fortuitous.

We venture to think, then, that the deductive method greatly elucidates this vexed question in physiology; while at the same time our argument collaterally exhibits the limits within which the deductive method is applicable. For while we see that this extremely *general*

question may be satisfactorily dealt with deductively ; the conclusion at which we have arrived, itself implies that the more *special* phenomena of organization cannot be so dealt with.

With a brevity necessitated by fast-diminishing space, we must draw attention to yet another method of investigating the general truths of physiology—a method to which physiology already owes one luminous idea, but which is not at present formally recognized as a method. We refer to the comparison of physiological phenomena with social phenomena.

The analogy between individual organisms and the social organism, is one that has in all ages forced itself on the attention of the observant. Though modern science does not countenance those crude ideas of this analogy which have been from time to time expressed since the days of the Greeks ; yet it more and more tends to show that there is an analogy, and a very remarkable one. While it is becoming clear that there are no such special parallelisms between the constituent parts of a man and those of a nation as have been thought to exist ; it is also becoming clear that the general principles of development and structure displayed in all organized bodies are displayed in societies also. The fundamental characteristic both of societies and of living creatures, is, that they consist of mutually-dependent parts ; and it would seem that this involves a community of various other characteristics. Most men who have any acquaintance with the broad facts of both physiology and sociology, are beginning to recognize this correspondence not as a plausible fancy, but as a scientific truth. And we are strongly of opinion that it will by and by be seen to hold to an extent which few at present suspect.

Meanwhile, if any such correspondence exists, it is clear that Biology and Sociology will more or less interpret each other. Each affords its special facilities for inquiry. Relations of cause and effect clearly traceable in the social organism, may lead to the search for analogous ones in the individual organism; and may so elucidate what might else be inexplicable. Laws of growth and function disclosed by the pure physiologist, may occasionally give us the clue to certain social modifications otherwise difficult to understand. If they can do no more, the two sciences can at least exchange suggestions and confirmations; and this will be no small aid. The conception of "the physiological division of labour," which political economy has already supplied to Biology, is one of no small value. And the probability is that it has others to give.

In support of this opinion, we will now cite cases in which such aid is furnished. And, in the first place, let us see whether the facts of social organization do not afford additional support to some of the doctrines set forth in the foregoing parts of this article.

One of the positions we have endeavoured to establish is, that in animals the process of development is carried on, not by differentiations only, but by subordinate integrations. Now in the social organism we may see the same duality of process; and further, it is to be observed that the integrations are of the same three kinds. Thus we have integrations that arise from the simple growth of adjacent parts that perform like functions; as for instance, the coalescence of Manchester with its calico-weaving suburbs. We have other integrations that arise when, out of several places producing a particular commodity, one monopolizes more and more of the business, and leaves the rest to dwindle; as witness the

growth of the Yorkshire cloth-districts at the expense of those in the west of England; or the absorption by Staffordshire of the pottery-manufacture, and the consequent decay of the establishments that once flourished at Derby, and elsewhere. And we have those yet other integrations that result from the actual approximation of the similarly-occupied parts; whence result such facts as the concentration of publishers in Paternoster Row, of lawyers in the Temple and neighbourhood, of corn-merchants about Mark Lane, of civil engineers in Great George Street, of bankers in the centre of the city. Finding thus that in the evolution of social organisms, as in the evolution of individual organisms, there are integrations as well as differentiations, and moreover that these integrations are of the same three kinds; we have additional reason for considering these integrations as essential parts of the developmental process, needing to be included in its formula. And further, the circumstance that in the social organism these integrations are dependent on community of function, confirms the hypothesis that they are thus dependent in the individual organism.

Again, we endeavoured to show deductively, that the contrasts of parts first seen in all unfolding embryos, are consequent upon the contrasted circumstances to which such parts are exposed; that thus, adaptation of constitution to conditions is the principle which determines their primary changes; and that, possibly, if we include under the formula hereditarily-transmitted adaptations, all differentiations arising afterwards may be similarly determined. Well, we need not long contemplate the facts to see that the predominant social differentiations are brought about in an analogous way. As the members of an originally-homogeneous community

multiply and spread, the gradual separation into sections which simultaneously takes place, manifestly depends on differences of local circumstances. Those who happen to live near some place chosen, perhaps for its centrality, as one of periodical assemblage, become traders, and a town springs up; those who live dispersed continue to hunt or cultivate the earth; those who spread to the seashore fall into maritime occupations. And each of these classes undergoes modifications of nature fitting it to its function. Later in the process of social evolution these local adaptations are greatly multiplied. In virtue of differences of soil and climate, the rural inhabitants in different parts of the kingdom have their occupations partially specialized; and are respectively distinguished as chiefly producing cattle or sheep, or wheat, or oats, or hops, or cyder. People living where coal-fields are discovered become colliers; Cornishmen take to mining because Cornwall is metalliferous; and the iron-manufacture is the dominant industry where ironstone is plentiful. Liverpool has assumed the office of importing cotton, in consequence of its proximity to the district where cotton goods are made; and for analogous reasons Hull has become the chief port at which foreign wools are brought in. Even in the establishment of breweries, of dye-works, of slate quarries, of brick-yards, we may see the same truth. So that both in general and in detail these specializations of the social organism which characterize separate districts, primarily depend on local circumstances. Of the originally-similar units making up the social mass, different groups assume the different functions which their respective positions entail; and become adapted to their conditions. Thus, that which we concluded, *à priori*, was the leading cause of organic differentiations, we find, *à posteriori*, to be the

leading cause of social differentiations. Nay further, as we inferred that possibly the embryonic changes which are not thus directly caused, are caused by hereditarily-transmitted adaptations; so, we may actually see that in embryonic societies, such changes as are not due to direct adaptations are in the main traceable to adaptations originally undergone by the parent society. The colonies founded by distinct nations, while they similarly exhibit specializations caused in the way above described, diverge in so far as they take on, more or less, the organizations of the nations they sprung from. A French settlement does not develop exactly after the same manner as an English one; and both assume forms unlike those which Roman settlements assumed. Now the fact that the differentiations of societies is determined partly by the direct adaptation of their units to local conditions, and partly by the transmitted influence of like adaptations undergone by ancestral societies, enforces the conclusion otherwise reached, that the differentiation of individual organisms results from immediate adaptations compounded with ancestral adaptations.

From confirmations thus furnished by Sociology to Physiology, let us now pass to a suggestion similarly furnished. A factory, or other producing establishment, or a town made up of such establishments, is an agency for elaborating some commodity consumed by society at large; and may be regarded as analogous to a gland or viscus in an individual organism. If now we inquire what is the primitive mode in which one of these producing establishments grows up, we find it to be this. A single worker, who himself sells the produce of his labour, is the germ. His business increasing, he employs helpers—sons or apprentices; and having done this, he becomes

a vendor not only of his own handiwork, but of that of others. A further increase of his business compels him to multiply his assistants, and his sale grows so rapid that he is obliged to confine himself to the process of selling; that is, he ceases to be a producer, and becomes simply a channel through which the produce of others is conveyed to the public. Should his prosperity rise yet higher, he finds that he is unable to manage even the sale of his commodities, and has to employ others, probably of his own family, to aid him in selling; that is, to him as a main channel are now added subordinate channels; and so on continuously. Moreover, when there grow up in one place, as a Manchester or a Birmingham, many establishments of like kind, this process is carried still further. There arise factors and buyers, who are the channels through which are transmitted the produce of many factories; and we believe that primarily these factors were manufacturers who undertook to dispose of the produce of smaller houses as well as their own, and ultimately became salesmen only. Under a converse aspect, all the stages of this development have been within these few years clearly exemplified in our railway contractors. There are sundry men now living who illustrate the whole process in their own persons—men who were originally navvies, digging and wheeling; who then undertook some small sub-contract, and worked along with those they paid; who presently took larger contracts and employed foremen; and who now contract for whole railways and let portions to sub-contractors. That is to say, we have men who were originally workers, but have finally become the main channels out of which diverge secondary channels, which again bifurcate into the subordinate channels, through which flows the money (that is, the nutriment) supplied

by society to the actual makers of the railway. Now it seems worth inquiring whether this is not the original course followed in the evolution of secreting and excreting organs in an animal. We know that such organs begin as clusters of separate cells; are then seen as groups of follicles each containing many cells; and end as masses of such groups, permeated by ducts. But while analogy suggests that this is the *original* mode in which such organs are developed, it suggests that this does not continue to be the mode. For as we find that in the social organism, manufacturing establishments are no longer commonly developed through the series of modifications above described, but now mostly arise by the direct transformation of a number of persons into master, clerks, foremen, workers, &c.; so the approximative method of forming organs, may in some cases be replaced by a direct metamorphosis of the organic elements into the destined structure without any transitional structures being passed through. That there are organs thus formed is an ascertained fact; and the additional question which analogy suggests is, whether the direct method is substituted for the indirect method.

These few illustrations will sufficiently justify our opinion that the study of organized bodies may be indirectly furthered by the study of the body politic: hints, at least, may be expected, if nothing more. The Inductive Method, usually alone employed by most physiologists, may not only derive important assistance from the Deductive Method, but it may further be supplemented by the Sociological Method.

XIII.

*THE COMPARATIVE PSYCHOLOGY OF
MAN.*

[READ BEFORE THE ANTHROPOLOGICAL INSTITUTE, JUNE 22, 1875.]

THE COMPARATIVE PSYCHOLOGY OF MAN.

WHILE discussing with two members of the Anthropological Institute the work to be undertaken by its psychological section, I made certain suggestions which they requested me to put in writing. When reminded, some months after, of the promise I had made to do this, I failed to recall the particular suggestions referred to ; but in the endeavour to remember them, I was led to glance over the whole subject of comparative human psychology. Hence resulted the following paper.

That making a general survey is useful as a preliminary to deliberate study, either of a whole or of any part, scarcely needs showing. Vagueness of thought accompanies the wandering about in a region without known bounds or landmarks. Attention devoted to some portion of a subject in ignorance of its connexion with the rest, leads to untrue conceptions. The whole cannot be rightly conceived without some knowledge of the parts ; and no part can be rightly conceived out of relation to the whole.

To map out the Comparative Psychology of Man must also conduce to the more methodic carrying on of inquiries. In this, as in other things, division of labour will facilitate progress ; and that there may be division of labour, the work itself must be systematically divided.

We may conveniently separate the entire subject into three main divisions, arranged in the order of increasing speciality.

The first division will treat of the degrees of mental evolution of different human types, generally considered : taking account of both the mass of mental manifestation and the complexity of mental manifestation. This division will include the relations of these characters to physical characters—the bodily mass and structure, and the cerebral mass and structure. It will also include inquiries concerning the time taken in completing mental evolution, and the time during which adult mental power lasts ; as well as certain most general traits of mental action, such as the greater or less persistence of emotions and of intellectual processes. The connexion between the general mental type and the general social type should also be here dealt with.

In the second division may be conveniently placed apart, inquiries concerning the relative mental natures of the sexes in each race. Under it will come such questions as these :—What differences of mental mass and mental complexity, if any, existing between males and females, are common to all races ? Do such differences vary in degree, or in kind, or in both ? Are there reasons for thinking that they are liable to change by increase or decrease ? What relations do they bear in each case to the habits of life, the domestic arrangements, and the social arrangements ? This division should also include in its scope the sentiments of the sexes towards one another, considered as varying quantitatively and qualitatively ; as well as their respective sentiments towards offspring, similarly varying.

For the third division of inquiries may be reserved the more special mental traits distinguishing different

types of men. One class of such specialities results from differences of proportion among faculties possessed in common ; and another class results from the presence in some races of faculties that are almost or quite absent from others. Each difference in each of these groups, when established by comparison, has to be studied in connexion with the stage of mental evolution reached, and has to be studied in connexion with the habits of life and the social development, regarding it as related to these both as cause and consequence.

Such being the outlines of these several divisions, let us now consider in detail the subdivisions contained within each.

I.—Under the head of general mental evolution we may begin with the trait of—

1. *Mental mass*.—Daily experiences show us that human beings differ in volume of mental manifestation. Some there are whose intelligence, high though it may be, produces little impression on those around ; while there are some who, when uttering even commonplaces, do it so as to affect listeners in a disproportionate degree. Comparison of two such makes it manifest that, generally, the difference is due to the natural language of the emotions. Behind the intellectual quickness of the one there is not felt any power of character ; while the other betrays a momentum capable of bearing down opposition—a potentiality of emotion that has something formidable about it. Obviously the varieties of mankind differ much in respect of this trait. Apart from kind of feeling, they are unlike in amount of feeling. The dominant races overrun the inferior races mainly in virtue of the greater quantity of energy in which this greater mental mass shows itself. Hence a series of in-

quiries, of which these are some :—(a) What is the relation between mental mass and bodily mass? Manifestly, the small races are deficient in it. But it also appears that races much upon a par in size—as, for instance, an Englishman and a Damara, differ considerably in mental mass. (b) What is its relation to mass of brain? and, bearing in mind the general law that in the same species, size of brain increases with size of body (though not in the same proportion), how far can we connect the extra mental mass of the higher races, with an extra mass of brain beyond that which is proper to their greater bodily mass? (c) What relation, if any, is there between mental mass and the physiological state expressed in vigour of circulation and richness of blood, as severally determined by mode of life and general nutrition? (d) What are the relations of this trait to the social state, as nomadic or settled, predatory or industrial?

2. *Mental complexity*.—How races differ in respect of the more or less involved structures of their minds, will best be understood on recalling that unlikeness between the juvenile mind and the adult mind among ourselves, which so well typifies the unlikeness between the minds of savage and civilized. In the child we see absorption in special facts. Generalities even of a low order are scarcely recognized, and there is no recognition of high generalities. We see interest in individuals, in personal adventures, in domestic affairs, but no interest in political or social matters. We see vanity about clothes and small achievements, but little sense of justice: witness the forcible appropriation of one another's toys. While there have come into play many of the simpler mental powers, there has not yet been reached that complication of mind which results from the addition of powers evolved out of these simpler ones. Kindred differences

of complexity exist between the minds of lower and higher races; and comparisons should be made to ascertain their kinds and amounts. Here, too, there may be a subdivision of the inquiries. (a) What is the relation between mental complexity and mental mass? Do not the two habitually vary together? (b) What is the relation to the social state, as more or less complex? that is to say—Do not mental complexity and social complexity act and react on each other?

3. *Rate of mental development.*—In conformity with the biological law that the higher the organisms the longer they take to evolve, members of the inferior human races may be expected to complete their mental evolution sooner than members of the superior races; and we have evidence that they do this. Travellers from all regions comment, now on the great precocity of children among savage and semi-civilized peoples, and now on the early arrest of their mental progress. Though we scarcely need more proofs that this general contrast exists, there remains to be asked the question, whether it is consistently maintained throughout all orders of races, from the lowest to the highest—whether, say, the Australian differs in this respect from the Hindu, as much as the Hindu does from the European. Of secondary inquiries coming under this sub-head may be named several. (a) Is this more rapid evolution and earlier arrest always unequally shown by the two sexes; or, in other words, are there in lower types proportional differences in rate and degree of development, such as higher types show us? (b) Is there in many cases, as there appears to be in some cases, a traceable relation between the period of arrest and the period of puberty? (c) Is mental decay early in proportion as mental evolution is rapid? (d) Can we in other respects assert that where

the type is low, the entire cycle of mental changes between birth and death—ascending, uniform, descending—comes within a shorter interval?

4. *Relative plasticity*.—Is there any relation between the degree of mental modifiability which remains in adult life, and the character of the mental evolution in respect of mass, complexity, and rapidity? The animal kingdom at large yields us reasons for associating an inferior and more rapidly-completed mental type, with a relatively automatic nature. Lowly organized creatures, guided almost entirely by reflex actions, are in but small degrees changeable by individual experiences. As the nervous structure complicates, its actions become less rigorously confined within pre-established limits; and as we approach the highest creatures, individual experiences take larger and larger shares in moulding the conduct: there is an increasing ability to take in new impressions and to profit by the acquisitions. Inferior and superior human races are contrasted in this respect. Many travellers comment on the unchangeable habits of savages. The semi-civilized nations of the East, past and present, were, or are, characterized by a greater rigidity of custom than characterizes the more civilized nations of the West. The histories of the most civilized nations show us that in their earlier times, the modifiability of ideas and habits was less than it is at present. And if we contrast classes or individuals around us, we see that the most developed in mind are the most plastic. To inquiries respecting this trait of comparative plasticity, in its relations to precocity and early completion of mental development, may fitly be added inquiries respecting its relations to the social state, which it helps to determine, and which reacts upon it.

5. *Variability*.—To say of a mental nature that its

actions are extremely inconstant, and at the same time to say that it is a relatively unchangeable nature, apparently implies a contradiction. When, however, the inconstancy is understood as referring to the manifestations which follow one another from minute to minute, and the unchangeableness to the average manifestations, extending over long periods, the apparent contradiction disappears; and it becomes comprehensible that the two traits may, and ordinarily do, co-exist. An infant, quickly weary with each kind of perception, wanting ever a new object which it soon abandons for something else, and alternating a score times a day between smiles and tears, shows us a very small persistence in each kind of mental action: all its states, intellectual and emotional, are transient. Yet at the same time its mind cannot be easily changed in character. True, it changes spontaneously in due course; but it long remains incapable of receiving ideas or emotions beyond those of simple orders. The child exhibits less rapid variations, intellectual and emotional, while its educability is greater. Inferior human races show us this combination: great rigidity of general character with great irregularity in its passing manifestations. Speaking broadly, while they resist permanent modification they lack intellectual persistence, and they lack emotional persistence. Of various low types we read that they cannot keep the attention fixed beyond a few minutes on anything requiring thought, even of a simple kind. Similarly with their feelings: these are less enduring than those of civilized men. There are, however, qualifications to be made in this statement; and comparisons are needed to ascertain how far these qualifications go. The savage shows great persistence in the action of the lower intellectual faculties. He is untiring in minute observation. He is un-

tiring, also, in that kind of perceptive activity which accompanies the making of his weapons and ornaments: often persevering for immense periods in carving stones, &c. Emotionally, too, he shows persistence not only in the motives prompting these small industries, but also in certain of his passions—especially in that of revenge. Hence, in studying the degrees of mental variability shown us in the daily lives of the different races, we must ask how far variability characterizes the whole mind, and how far it holds only of parts of the mind.

6. *Impulsiveness*.—This trait is closely allied with the last: unenduring emotions are emotions which sway the conduct now this way and now that, without any consistency. The trait of impulsiveness may, however, be fitly dealt with separately, because it has other implications than mere lack of persistence. Comparisons of the lower human races with the higher, appear generally to show that, along with brevity of the passions, there goes violence. The sudden gusts of feeling which men of inferior types display, are excessive in degree as they are short in duration; and there is probably a connexion between these two traits: intensity sooner producing exhaustion. Observing that the passions of childhood illustrate this connexion, let us turn to certain interesting questions concerning the decrease of impulsiveness which accompanies advance in evolution. The nervous processes of an impulsive being, are less remote from reflex actions than are those of an unimpulsive being. In reflex actions we see a simple stimulus passing suddenly into movement: little or no control being exercised by other parts of the nervous system. As we ascend to higher actions, guided by more and more complicated combinations of stimuli, there is not the same instantaneous discharge in simple motions; but there is

a comparatively deliberate and more variable adjustment of compound motions, duly restrained and proportioned. It is thus with the passions and sentiments in the less developed natures and in the more developed natures. Where there is but little emotional complexity, an emotion, when excited by some occurrence, explodes in action before the other emotions have been called into play; and each of these, from time to time, does the like. But the more complex emotional structure is one in which these simpler emotions are so co-ordinated that they do not act independently. Before excitement of any one has had time to cause action, some excitement has been communicated to others—often antagonistic ones—and the conduct becomes modified in adjustment to the combined dictates. Hence results a decreased impulsiveness, and also a greater persistence. The conduct pursued, being prompted by several emotions co-operating in degrees which do not exhaust them, acquires a greater continuity; and while spasmodic force becomes less conspicuous, there is an increase in the total energy. Examining the facts from this point of view, there are sundry questions of interest to be put respecting the different races of men. (a) To what other traits than degree of mental evolution is impulsiveness related? Apart from difference in elevation of type, the New-World races seem to be less impulsive than the Old-World races. Is this due to constitutional apathy? Can there be traced (other things equal) a relation between physical vivacity and mental impulsiveness? (b) What connexion is there between this trait and the social state? Clearly a very explosive nature—such as that of the Bushman—is unfit for social union; and, commonly, social union, when by any means established, checks impulsiveness. (c) What respective shares in checking

impulsiveness are taken by the feelings which the social state fosters—such as the fear of surrounding individuals, the instinct of sociality, the desire to accumulate property, the sympathetic feelings, the sentiment of justice? These which require a social environment for their development, all of them involve imaginations of consequences more or less distant; and thus imply checks upon the promptings of the simpler passions. Hence arise the questions—In what order, in what degrees, and in what combinations, do they come into play?

7. One further general inquiry of a different kind may be added. What effect is produced on mental nature by mixture of races? There is reason for believing that throughout the animal kingdom, the union of varieties that have become widely divergent is physically injurious; while the union of slightly divergent varieties is physically beneficial. Does the like hold with the mental nature? Some facts seem to show that mixture of human races extremely unlike produces a worthless type of mind—a mind fitted neither for the kind of life led by the higher of the two races, nor for that led by the lower—a mind out of adjustment to all conditions of life. Contrariwise, we find that peoples of the same stock, slightly differentiated by lives carried on in unlike circumstances for many generations, produce by mixture a mental type having certain superiorities. In his work on *The Huguenots*, Mr. Smiles points out how large a number of distinguished men among us have descended from Flemish and French refugees; and M. Alphonse De Candolle, in his *Histoire des Sciences et des Savants depuis deux Siècles*, shows that the descendants of French refugees in Switzerland have produced an unusually great proportion of scientific men. Though, in

part, this result may be ascribed to the original natures of such refugees, who must have had that independence which is a chief factor in originality, yet it is probably in part due to mixture of races. For thinking this, we have evidence which is not open to two interpretations. Prof. Morley draws attention to the fact that, during seven hundred years of our early history, "the best genius of England sprang up on the line of country in which Celts and Anglo-Saxons came together." In like manner, Mr. Galton, in his *English Men of Science*, shows that in recent days these have mostly come from an inland region, running generally from north to south, which we may reasonably presume contains more mixed blood than do the regions east and west of it. Such a result seems probable *à priori*. Two natures respectively adapted to slightly unlike sets of social conditions, may be expected by their union to produce a nature somewhat more plastic than either—a nature more impressible by the new circumstances of advancing social life, and therefore more likely to originate new ideas and display modified sentiments. The comparative psychology of man may, then, fitly include the mental effects of mixture; and among derivative inquiries we may ask—How far the conquest of race by race has been instrumental in advancing civilization by aiding mixture, as well as in other ways?

II.—The second of the three leading divisions named at the outset is less extensive. Still, concerning the relative mental natures of the sexes in each race, questions of much interest and importance may be raised.

1. *Degree of difference between the sexes*.—It is an established fact that, physically considered, the contrast between males and females is not equally great in all

types of mankind. The bearded races, for instance, show us a greater unlikeness between the two than do the beardless races. Among South American tribes, men and women have a greater general resemblance in form, &c., than is usual elsewhere. The question, then, suggests itself—Do the mental natures of the sexes differ in a constant or in a variable degree? The difference is unlikely to be a constant one; and, looking for variation, we may ask what is its amount, and under what conditions does it occur?

2. *Difference in mass and in complexity.*—The comparisons between the sexes, of course, admit of subdivisions parallel to those made in the comparisons between the races. Relative mental mass and relative mental complexity have chiefly to be observed. Assuming that the great inequality in the cost of reproduction to the two sexes is the cause of unlikeness in mental mass, as in physical mass, this difference may be studied in connexion with reproductive differences presented by the various races, in respect of the ages at which reproduction commences, and the periods over which it lasts. An allied inquiry may be joined with this; namely, how far the mental developments of the two sexes are affected by their relative habits in respect to food and physical exertion? In many of the lower races, the women, treated with great brutality, are, physically, much inferior to the men: excess of labour and defect of nutrition being apparently the combined causes. Is any arrest of mental development simultaneously caused?

3. *Variation of the differences.*—If the unlikeness, physical and mental, of the sexes is not constant, then, supposing all races have diverged from one original stock, it follows that there must have been transmission of accumulated differences to those of the same sex in

posterity. If, for instance, the prehistoric type of man was beardless, then the production of a bearded variety implies that within that variety the males continued to transmit an increasing amount of beard to descendants of the same sex. This limitation of heredity by sex, shown us in multitudinous ways throughout the animal kingdom, probably applies to the cerebral structures as much as to other structures. Hence the question—Do not the mental natures of the sexes in alien types of Man diverge in unlike ways and degrees?

4. *Causes of the differences.*—Are any relations to be traced between these variable differences and the variable parts the sexes play in the business of life? Assuming the cumulative effects of habit on function and structure, as well as the limitation of heredity by sex, it is to be expected that if, in any society, the activities of one sex, generation after generation, differ from those of the other, there will arise sexual adaptations of mind. Some instances in illustration may be named. Among the Africans of Loango and other districts, as also among some of the Indian Hill-tribes, the men and women are strongly contrasted as respectively inert and energetic: the industry of the women having apparently become so natural to them that no coercion is needed. Of course, such facts suggest an extensive series of questions. Limitation of heredity by sex may account both for those sexual differences of mind which distinguish men and women in all races, and for those which distinguish them in each race, or each society. An interesting subordinate inquiry may be, how far such mental differences are inverted in cases where there is inversion of social and domestic relations; as among those Khasi Hill-tribes, whose women have so far the upper hand that they turn off their husbands in a summary way if they displease them.

5. *Mental modifiability in the two sexes.*—Along with comparisons of races in respect of mental plasticity may go parallel comparisons of the sexes in each race. Is it true always, as it appears to be generally true, that women are less modifiable than men? The relative conservatism of women—their greater adhesion to established ideas and practices—is manifest in many civilized and semi-civilized societies. Is it so among the uncivilized? A curious instance of stronger attachment to custom in women than in men is given by Dalton, as occurring among the Juangs, one of the lowest wild tribes of Bengal. Until recently the only dress of both sexes was something less than that which the Hebrew legend gives to Adam and Eve. Years ago the men were led to adopt a cloth bandage round the loins, in place of the bunch of leaves; but the women adhered to the aboriginal habit: a conservatism shown where it might have been least expected.

6. *The sexual sentiment.*—Results of value may be looked for from comparisons of races made to determine the amounts and characters of the higher feelings to which the relation of the sexes gives rise. The lowest varieties of mankind have but small endowments of these feelings. Among varieties of higher types, such as the Malayo-Polynesians, these feelings seem considerably developed: the Dyaks, for instance, sometimes display them in great strength. Speaking generally, they appear to become stronger with the advance of civilization. Several subordinate inquiries may be named. (a) How far is development of the sexual sentiment dependent upon intellectual advance—upon growth of imaginative power? (b) How far is it related to emotional advance; and especially to evolution of those emotions which originate from sympathy? What are its relations to

polyandry and polygyny? (c) Does it not tend towards, and is it not fostered by, monogamy? (d) What connexion has it with maintenance of the family bond, and the consequent better rearing of children?

III.—Under the third head, to which we may now pass, come the more special traits of the different races.

1. *Imitableness*.—One of the characteristics in which the lower types of men show us a smaller departure from reflex action than do the higher types, is their strong tendency to mimic the motions and sounds made by others—an almost involuntary habit which travellers find it difficult to check. This meaningless repetition, which seems to imply that the idea of an observed action cannot be framed in the mind of the observer without tending forthwith to discharge itself in the action conceived (and every ideal action is a nascent form of the consciousness accompanying performance of such action), evidently diverges but little from the automatic; and decrease of it is to be expected along with increase of self-regulating power. This trait of automatic mimicry is evidently allied with that less automatic mimicry which shows itself in greater persistence of customs. For customs adopted by each generation from the last without thought or inquiry, imply a tendency to imitate which overmasters critical and sceptical tendencies: so maintaining habits for which no reasons can be given. The decrease of this irrational mimicry, strongest in the lowest savage and feeblest in the highest of the civilized, should be studied along with the successively higher stages of social life, as being at once an aid and a hindrance to civilization: an aid in so far as it gives that fixity to the social organization without which a society cannot survive; a hindrance in so far as it offers resist-

ance to changes of social organization that have become desirable.

2. *Incuriosity*.—Projecting our own natures into the circumstances of the savage, we imagine ourselves as marvelling greatly on first seeing the products and appliances of civilized life. But we err in supposing that the savage has feelings such as we should have in his place. Want of rational curiosity respecting these incomprehensible novelties, is a trait remarked of the lowest races wherever found; and the partially-civilized races are distinguished from them as exhibiting rational curiosity. The relation of this trait to the intellectual nature, to the emotional nature, and to the social state, should be studied.

3. *Quality of thought*.—Under this vague head may be placed many sets of inquiries, each of them extensive—(a) The degree of generality of the ideas; (b) the degree of abstractness of the ideas; (c) the degree of definiteness of the ideas; (d) the degree of coherence of the ideas; (e) the extent to which there have been developed such notions as those of *class*, of *cause*, of *uniformity*, of *law*, of *truth*. Many conceptions which have become so familiar to us that we assume them to be the common property of all minds, are no more possessed by the lowest savages than they are by our own children; and comparisons of types should be so made as to elucidate the processes by which such conceptions are reached. The development under each head has to be observed—(a) independently in its successive stages; (b) in connexion with the co-operative intellectual conceptions; (c) in connexion with the progress of language, of the arts, and of social organization. Already linguistic phenomena have been used in aid of such inquiries; and more systematic use of them should be made. Not

only the number of general words, and the number of abstract words, in a people's vocabulary should be taken as evidence, but also their *degrees* of generality and abstractness; for there are generalities of the first, second, third, &c., orders, and abstractions similarly ascending in degree. *Blue* is an abstraction referring to one class of impressions derived from visible objects; *colour* is a higher abstraction referring to many such classes of visual impressions; *property* is a still higher abstraction referring to classes of impressions received not through the eyes alone, but through other sense-organs. If generalities and abstractions were arranged in the order of their extensiveness and in their grades, tests would be obtained which, applied to the vocabularies of the uncivilized, would yield definite evidence of the intellectual stages reached.

4. *Peculiar aptitudes*.—To such specialities of intelligence as mark different degrees of evolution, have to be added minor ones related to modes of life: the kinds and degrees of faculty which have become organized in adaptation to daily habits—skill in the use of weapons, powers of tracking, quick discrimination of individual objects. And under this head may fitly come inquiries concerning some race-peculiarities of the æsthetic class, not at present explicable. While the remains from the Dordogne caves show us that their inhabitants, low as we must suppose them to have been, could represent animals, both by drawing and carving, with some degree of fidelity; there are existing races, probably higher in other respects, who seem scarcely capable of recognizing pictorial representations. Similarly with the musical faculty. Almost or quite wanting in some inferior races, we find it in other races not of high grade, developed to an unexpected degree: instance the Negroes, some of

whom are so innately musical, that, as I have been told by a missionary among them, the children in native schools when taught European psalm-tunes, spontaneously sing seconds to them. Whether any causes can be discovered for race-peculiarities of this kind, is a question of interest.

5. *Specialities of emotional nature.*—These are worthy of careful study, as being intimately related to social phenomena—to the possibility of social progress, and to the nature of the social structure. Among others to be noted there are—(a) Gregariousness or sociality—a trait in the strength of which races differ widely: some, as the Mantras, being almost indifferent to social intercourse; some being unable to dispense with it. Obviously the degree of this desire for the presence of fellow-men, affects greatly the formation of social groups, and consequently influences social progress. (b) Intolerance of restraint. Men of some inferior types, as the Mapuché, are ungovernable; while those of other types, no higher in grade, not only submit to restraint, but admire the persons exercising it. These contrasted natures have to be observed in connexion with social evolution; to the early stages of which they are respectively antagonistic and favourable. (c) The desire for praise is a trait which, common to all races, high and low, varies considerably in degree. There are quite inferior races, as some of those in the Pacific States, whose members sacrifice without stint to gain the applause which lavish generosity brings; while, elsewhere, applause is sought with less eagerness. Notice should be taken of the connexion between this love of approbation and the social restraints; since it plays an important part in the maintenance of them. (d) The acquisitive propensity. This, too, is a character the degrees of

which, and the relations of which to the social state, have to be especially noted. The desire for property grows along with the possibility of gratifying it; and this, extremely small among the lowest men, increases as social development goes on. With the advance from tribal property to family property and individual property, the notion of private right of possession gains definiteness, and the love of acquisition strengthens. Each step towards an orderly social state makes larger accumulations possible, and the pleasures achievable by them more sure; while the resulting encouragement to accumulate, leads to increase of capital and further progress. This action and re-action of the sentiment and the social state, should be in every case observed.

6. *The altruistic sentiments*.—Coming last, these are also highest. The evolution of them in the course of civilization, shows us clearly the reciprocal influences of the social unit and the social organism. On the one hand, there can be no sympathy, nor any of the sentiments which sympathy generates, unless there are fellow-beings around. On the other hand, maintenance of union with fellow-beings depends in part on the presence of sympathy, and the resulting restraints on conduct. Gregariousness or sociality favours the growth of sympathy; increased sympathy conduces to closer sociality* and a more stable social state; and so, continuously, each increment of the one makes possible a further increment of the other. Comparisons of the altruistic sentiments resulting from sympathy, as exhibited in different types of men and different social states, may be conveniently arranged under three heads—(a) Pity, which should be observed as displayed towards offspring, towards the sick and aged, and towards enemies. (b) Generosity (duly discriminated from the love of display)

as shown in giving; as shown in the relinquishment of pleasures for the sake of others; as shown by active efforts on others' behalf. The manifestations of this sentiment, too, are to be noted in respect of their range—whether they are limited to relatives; whether they extend only to those of the same society; whether they extend to those of other societies; and they are also to be noted in connexion with the degree of providence—whether they result from sudden impulses obeyed without counting the cost, or go along with clear foresight of the future sacrifices entailed. (c) Justice. This most abstract of the altruistic sentiments is to be considered under aspects like those just named, as well as under many other aspects—how far it is shown in regard to the lives of others; how far in regard to their freedom; how far in regard to their property; how far in regard to their various minor claims. And comparisons concerning this highest sentiments should, beyond all others, be carried on along with comparisons of the accompanying social states, which it largely determines—the forms and actions of governments; the characters of the laws; the relations of classes.

Such, stated as briefly as consists with clearness, are the leading divisions and subdivisions under which the Comparative Psychology of Man may be arranged. In going rapidly over so wide a field, I have doubtless overlooked much that should be included. Doubtless, too, various of the inquiries named will branch out into subordinate inquiries well worth pursuing. Even as it is, however, the programme is extensive enough to occupy numerous investigators, who may with advantage take separate divisions.

Though, after occupying themselves with primitive

arts and products, anthropologists have devoted their attention mainly to the physical characters of the human races; it must, I think, be admitted that the study of these yields in importance to the study of their psychical characters. The general conclusions to which the first set of inquiries may lead, cannot so much affect our views respecting the highest classes of phenomena as can the general conclusions to which the second set may lead. A true theory of the human mind vitally concerns us; and systematic comparisons of human minds, differing in their kinds and grades, will help us in forming a true theory. Knowledge of the reciprocal relations between the characters of men and the characters of the societies they form, must influence profoundly our ideas of political arrangements. When the interdependence of individual natures and social structures is understood, our conceptions of the changes now taking place, and hereafter to take place, will be rectified. A comprehension of mental development as a process of adaptation to social conditions, which are continually remoulding the mind and are again remoulded by it, will conduce to a salutary consciousness of the remoter effects produced by institutions upon character; and will check the grave mischiefs which ignorant legislation now causes. Lastly, a right theory of mental evolution as exhibited by humanity at large, giving a key, as it does, to the evolution of the individual mind, must help to rationalize our perverse methods of education; and so to raise intellectual power and moral nature.

EXPERIENCE

PUTNAM

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TO CLIFFORD SHARP

DEAR CLIFFORD,

You will not be surprised at this dedication : most of the items in this book were contributed to *The New Statesman* while you were editing it ; and if you were not the first editor (Cecil Chesterton had used me sometimes in this way) you were at any rate the last editor to encourage me to write about what I had observed instead of always about books or plays. If you turn to my adventures on the night of August 4th 1914, you will find there a confession that I have cherished in my time hankerings after the life of a "Special Reporter." Indeed, it was one of my many dreams that you should become the editor of a great daily paper (a post for which you were admirably fitted) and I the apple of your reporters. To record my impressions of trials, strikes, public characters, disasters ; to define "situations" whether they arose in East Ham or Abyssinia ; to live with a packed bag ready to dart to the scene of any crisis once seemed to me a most enviable lot. I have, too, an immense respect for the Art of the Reporter, so much respect that I have often been extremely dissatisfied with the manner in which that sort of work is done. The main function of the Press is to make vivid to us everything important or interesting that is happening everywhere at a given moment. Yet it is in the presentation of actualities that the Press most often fails us. Editors seldom employ imaginative men for this purpose, and consequently their Reporters are usually at their best when they

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confine themselves strictly to news. But facts by themselves are dead; the reporter's art lies in making them credible and in interpreting them. Two contemporary novelists have shown that they were also born-reporters, Rudyard Kipling and H. G. Wells; but few who have made description their profession have attained high excellence in it. At the moment I can only think of three notable exceptions in our life-time, George Stevens, Henry Nevinson, William Bolitho—and, yes, there is a fourth, an Italian, Ugo Ojetti. He, too, creates the scene.

William Bolitho was one of those zestful men who feel that only by drawing upon every faculty—heart, intellect, imagination, eye—can anything approaching justice be done to the interest of current events. I would rather celebrate his work, so brilliant and so apparently evanescent, than that of many a finer writer among my contemporaries. It reminds one that Journalism also is an art. Journalism differs from Literature in that it must be interesting at the very moment at which it is written, and be addressed to the inattentive as well as to the concentrated reader. Hence the contemptuous use of the word "journalism" and the invidious distinction implied in such judgments as "He's only a journalist." Yet we can still read pages of Nevinson or Stevens' account of the Diamond Jubilee, or Bolitho's description of Landru's trial with the emotions of one actually on the spot. What they have done is precisely what the historian is praised for achieving—they have made dead facts live, and made them comprehensible.

After looking through the following pages, you may decide that my aptitudes never lay in that direction, but rather in that of meditative retrospection. Well, I shall bow to that verdict, for I never worked for an editor who had a surer sense of what

each contributor could best supply. Doubtless in the happy event of your having occupied the editorial chair of a great daily paper, I should have pled to be transferred from the Theatre of Art to the Theatre of Life ; perhaps (for where editing was concerned you were a hard man) in vain. But I would have insisted that you had never fairly tried me ; that I had been compelled to exercise my faculties of observation and description only on events which had accidentally come to my notice, and then only for the purpose of a review or an essay on some general topic. Whose fault was it, I would have argued, that I had so seldom been " on the spot," so seldom " present " to use the words of Pater, which describe, oddly enough, the life of the Special Reporter, " at the focus where the greatest number of forces unite in their purest energy " ? You would have shrugged your shoulders and reminded me that the *New Statesman* had been a poor paper, unable to afford sending me or anybody else travelling for copy. That, I hasten to say, was the only sense in which it ever was " poor," and I take this opportunity of paying a tribute to you who made that paper.

Let me say what the *New Statesman* meant to me when it started. I had written dramatic criticism for the *Speaker*, but when that paper turned into the *Nation*, the new editor, Massingham, had no use for me. It was an enormous relief to get regular work again, and, too, work better paid. The *Speaker* had only been able to afford thirty shillings for dramatic articles even when they ran, as mine often did, to two thousand words. The *Eye Witness*, on which I had next depended to save me from nibbling away too fast my small capital, had been most erratic in its remunerations. We were all of us, Belloc, G.K. and Cecil Chesterton, Maurice Baring and I, paid at irregular intervals,

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and we racked our brains to think of an explanation which would account for those incalculable but blessed spates. Oddly enough, they appeared to coincide either with our employer buying yet another paper, or with his starting a publishing business, or with his abrupt disappearances abroad. In short, with moments when anyone might have expected money to be tight. We entertained the notion that he must be the illegitimate son of a wealthy Russian countess living on the Riviera, whom he could periodically tap or blackmail. He was an open-handed, kindly, rather wistful man. The only benefit that he ever got out of feeding us, as far as I could see, was one review of his own book of verse which all other papers had ignored. It was a difficult review to write, but we had three men of genius on the staff and, with Cecil Chesterton also pulling his weight, that review got written. However, the real explanation of the money-situation proved to be different. Suddenly our employer was charged with bigamy and embezzlement. Knowing nothing of this, I went down to the office one morning and to my amazement found several strange men lounging about with their hats on. I learnt on the spot one little fact about human nature ; that just as men instinctively bare their heads to show respect for the dead, they keep them obstinately covered to show contempt for the bankrupt. I was left with a stigma of thirty-odd pounds (two months' earnings) ; a sum which I gratefully recall was made up to me by subscription among my friends. So I lost nothing—not even my job, for the paper turned into the *New Witness* and continued to employ me till it lost the Marconi Libel case, after which it became a shakier support.

You can imagine therefore how glad I was when in the spring of 1913 you invited

me on to the staff of the *New Statesman* as dramatic critic; it meant security (in so far as that is obtainable by journalists), and it was opportunity. I had a high opinion of myself as a critic, which was only occasionally shaken, and I knew I sometimes wrote well, though at other times with an involved limpness most distressing to me. I thought I could hold the job; two guineas per thousand plus ten shillings extra for time wasted in attending theatres (extracted from you, you may remember, while strolling on the cliff-top of Beachy Head) and reviewing at the two-guinea rate. It was a beautiful prospect. It promised not only security but the delight of expressing oneself before an audience which would see when one had hit, or missed, a mark. And there was another aspect agreeable to me. The *New Statesman* was out to improve the world, to correct the injustices of the social system, to stick up for the have-nots. I had, and have, the vaguest notions as to the best means of accomplishing these ends, but provided that I am not obliged to help myself, I like to be associated with others intent upon them. It was therefore delightful to me that Shaw and the Webbs should be directors of this new paper and that you yourself were a Fabian. The atmosphere of the other papers for which I had worked had been radical, not socialistic. Temperamentally, they suited me better. But so far as I gave social questions a thought (and I did so only in connection with the study of human-nature) I was prepared to believe that the Fabians knew what was what, that genuine statesmanship was a prosaic grammatical kind of business (I still believe this), and that all sorts of rules and regulations (and prohibitions alas!) were absolutely necessary if more people were to have elbow-room and a fairer chance on this over-crowded competitive planet.

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The *New Statesman* was destined sometimes to shock me by its recommendations, or, more accurately, to prompt the reflection, "Oh dear, that would mean the end of a good many things I care about. What a world we shall end up with—if they get their way!" However, the paper cared about *justice*, and that was all important.

I found, when I got to know them, that the Webbs were less unfair to my friends, though they were decidedly firm about them, than my friends were about the Webbs. In their company I came across a purposeful magnanimity—not at all imposing, indeed almost mechanical—which, however, impressed me in the end as one of the most genuine things I had struck in human beings; also, a persistence of purpose which, though it arranged experience in a perspective not alluring to me, made some flashes of generous indignation, to which I responded readily, look rather cheap. And then there was Bernard Shaw! For him I had—and still have—a hero-worship; one which no amazed exasperation, either at some of his utterances or at the limitations of his genius, seems to make the slightest difference. In the hey-day of his narrower but more select fame, he was known as the "inimitable G.B.S."; to me he was, and is, the "indispensable." What shall we do when there is no one gaily and truculently to blow the gaff!

Of course to some extent I was a fish out of water in such company—or rather not out of water, for I was always easy and interested, but a fish in a strange tank. When I used to lunch with the Webbs, the talk took for granted much knowledge I did not possess. References by means of initials often bewildered me. I remember once inquiring what "the L.G.B." was, and the note in Webb's voice when he replied—I will not call it either impatience or contempt, which were absent

from his conversation—nevertheless fixed for ever the information in my memory.

Do you recall a week-end at Beachy Head, shortly before the paper started, to which the Webbs had invited its future staff? Squire, the literary editor, whom I already knew well from working with him on the *New Witness*, was there, and Robert Lynd, whom I then met for the first time, and others. What has remained with me are the two scraps of conversation. H. G. Wells, as we were all aware, had guyed the Webbs in *The New Machiavelli*, and he had recently published another novel. I remember Beatrice Webb saying cheerfully, "I'm in it; I'm the woman whose voice is described as 'a strangulated contralto,' but *you* are not, Sidney." "Oh yes, I am," said Webb, speaking from a sofa on which his legs and feet looked absurdly small in comparison with his broad brow and head, "Oh yes, I am, I'm described as one of those supplementary males often found among the lower crustacea." This smiling serenity made me feel that I was in high and good company.

Late that evening Bernard Shaw arrived, and I remember his remarking, à propos of his mother's funeral, on the soundness of the military instinct regarding such ceremonies; on the way to the grave one wanted solemn music, on the way back, a rousing march. But divining that I was slightly startled by this detachment, he turned to me and—with a casualness which made a deeper impression—added "You mustn't think I'm a person who forgets people." I instantly knew that to be true. What had interested me was not the apparent heartlessness of such a comment, but the light it threw on Shaw the artist—on that extraordinarily objective attitude towards emotions which is the source of the penetration in his plays, and, in spite

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of his tolerant sympathy with such a variety of types, of their imaginative limitations.

These memories strike me as throwing light on the *New Statesman* during its early years—its high dry detachment from personal and (above all) from self-delighting emotions, which if bracing was certainly austere. I was to feel on occasions an inclination to apostrophise my paper, "Come down O Maid from yonder mountain height." The *New Statesman* invariably emphasized the least gratifying reasons it could for any generous policy. In this respect it contrasted with its rival, the *Nation*, now happily united to it in holy wedlock. Both papers often moved in the same direction, but while the *Nation* supplied arguments which encouraged its readers to feel that they were the salt of the earth, the tone of the *Statesman* in arguing the same point would be, "If you want to escape being a short-sighted fool, this is the line you must take." This austerity was as marked in your own admirable articles—taut arguments released with a whizz like a steel spring, as it was in the atmosphere you created in the office. We were never permitted to forget that whatever our own work might be doing for the paper, it was nothing compared with what the paper was doing for us. This was salutary for writers like Squire, Lynd and myself whose contributions were signed. We were never encouraged to think ourselves indispensable; a persuasion to which journalists of our type are too prone. True, this made the atmosphere sometimes a trifle wintry, and Jack Squire, Robert Lynd and I used occasionally to give each other little warm shower-baths of praise—as a relief. At the same time we felt complete confidence in our editor's loyalty, while every week in your and in C. M. Lloyd's anonymous articles we had before our eyes an example of the possibility of keeping

apart satisfaction in doing one's best and the desire to get credit for it—a dicotomy upon which civilization itself depends.

Looking back I see that you possessed in an extraordinary degree two of the rarest editorial qualities: Creativeness (the power of blending a whole paper into a publication of homogeneous character) and Decision. The *New Statesman* never waited for the cat to jump, but sprang to its own conclusions. After I became Literary Editor in 1920, this business of maintaining a pervasive tone sometimes led to differences between us, when I would be often exasperatingly elusive and you would be often very rude. Seated opposite each other at the make-up hour, you would glare and I would despair—but not reform. You wanted the literary side of the paper to be readable from beginning to end. I did not care if there were items in it which the average intelligent educated person would skip, provided most of the paper appealed to him. It seemed to me, in the long run, better for our prestige that a good author should say "Of course, all the reviews have been piffle—except perhaps one in the *New Statesman* which showed that the man knew what my book was about," than that the A.I.R. (the Average Intelligent Reader) should be deluded on every page into supposing himself interested in, and instructed in, subjects about which he would really remain for ever as ignorant and indifferent as an owl. Again, you were all for a firm macadamized surface, while I liked it to be broken by those wild green sprouts of folly which are apt to appear when writers care about their work. I didn't mind (or even notice) a little bad grammar, especially when it seemed due to a quiver of sensibility, and to call Housman "Professor" in one sentence and "Mr." in the next, did not, if I observed it, seem to me to matter. But to you these were *blots*,

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symptoms, too, of a confounded inefficiency which I am afraid I exhibited in other departments of my work. Still, we always had in common a strong dislike of brilliant pretentious nonsense, and a well-concealed respect for each other which made our collaboration interesting. Besides this tug between us was, I believe, good for the paper. If it had not been for you, the literary side would have been slovenly ; if I had not been—well, what I was, readers of that part of the paper might have sometimes hardly known whether they were reading a current issue or one a month old. But as it was, our combination sometimes resulted in a paper which, from the first note to the last shorter notice, was more remarkable than any item in it, and that might be saying a lot.

I have met few men who could do their work as well as you without being praised for it, who were yet genuinely pleased whenever its value was recognized. I hope that this Dedication—the only practical tribute I can pay your gifts as a journalist and an editor, will at least bring you pleasure.—Yours always,

DESMOND MACCARTHY.

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THE ESSAYS OF MONTAIGNE

THE sleepless are often advised to court drowsiness by giving their minds to some monotonous occupation, such as counting imaginary sheep jumping a hedge-gap or staring at a visionary sheet of brown paper. I doubt if these expedients deserve their repute as sedatives; they are too boring to compete with random thoughts and recollections. Rather let one who lies awake with the stale ache of some anxiety at heart, or with a blunder rankling in his memory (for anger and remorse there is no poppy or mandragora), picture to himself a scene from the life of somebody, real or imaginary, with whom he is familiar. Let it be the picture of an existence interestingly—that is the point—interestingly safe. It matters not of what kind the interest is; it may be trivial: Sherlock Holmes and Watson travelling down together (first class) on a cold, early morning to the scene of some mystery, “Holmes’s tall spare figure looking even taller in his long ulster”; or David Copperfield safe at last with Miss Trotwood at Dover. Any scene will serve, from Mr. Woodhouse, surrounded by everyone he is used to, saying, “Let us all take a little gruel together,” to men carousing in the belly of a fort, provided only that it inspires a peculiar sensation of security. Everyone who mountains mole-hills in the dark should have many of these imaginative anodynes, for fancy exhausts each in turn, and new ones must be found. Let me not therefore be suspected of paying a dubious compliment if I mention

first among the merits of this book the fine sedative virtue it exhales.

Montaigne in his tower library, across the threshold of which no cares or obligations in material form of bailiff, wife or visitor were allowed to pass; Montaigne surrounded by his books, amulets against the more insidious approach of trouble, seems to the imagination as satisfyingly safe as ever Crusoe was behind his palisade, when once he had drawn his ladder up. And this art of life which Montaigne so genially, so casually, so persistently explains, never with the gestures of a preacher, but taking you by the arm like a friend and telling you candidly where it has profited himself—how like it often is to the shifts of one addressing himself to sleep, gently disengaging the clutch or worry from his soul!

Imagine him, then, in his tower among his books, looking out with tranquillity upon a distant angry world, reading just as the fancy takes him, making a *fagotage* of human extravagances, preparing with a lazy leisure *une fricassée que je barbouille*, choosing with care, but not with moroseness, the words which fit the thing, revelling sometimes in the coquetries of language—even to the point of committing to paper “certaine verbal wily-beguilies whereat I shake my ears”—yet feeling, happy man! that after all, writing is not his business: “*Mon métier et mon art, c'est vivre.*”

He was confident that his philosophy was important, yet that he need not proselytize; there were “meddlers enough already.” He was aware, perhaps, that those very means of convincing others which his temperament suggested were in the end more effective than to roar, thump, blaze as a prophet, “lighting such a candle as would never be put out.” It is probably a more effective way of combating intolerance in others

to insinuate into their minds a *Que sais-je?* than to thunder for the liberty of thought. Once instil into men that misgiving, and they too will come to think that "after all it is setting too high a value upon our conjectures to have a man roasted alive for them." They may stick to those conjectures, but the sceptical humanist will have attained his end.

This famous "scepticism" of Montaigne—what does it come to? We have perhaps read him too often with the eyes of Pascal, who took Montaigne's doubts far harder than Montaigne himself, and used them as a vaulting-block to faith. You must first doubt, Pascal insists, passionately, persistently, universally, or you can never believe; then, *humiliez-vous, raison impuissante, taisez-vous, nature imbécile, et entendez de votre Maître votre condition véritable que vous ignorez: écoutez Dieu.* Was Montaigne a sceptic? He who takes for his motto "I doubt," but is by no means sure of that, is not a sceptic in Pascal's sense. Such a man will take probability as his guide, and doubt will not be an uneasy pillow for his head. Montaigne had neither the passion nor the curiosity of a philosopher, but the interests of a moralist and an historian. He was an observer and a painter of human nature. He lived in times of ferocious duplicity, massacre and religious war; cruelty and self-deceived presumption were the qualities he most detested. Ah, if he could only soften and modify "the temerity of propositions," responsible, on both sides, for so much hatred and ambition! . . . He had the gift of natural candour, and we are still under its spell. His mind was also open to every quality in others. To one who declared that he had "often heard fools say things far from foolish," it was natural that pedantry and conscious superiority should seem to be regrettable barriers between

human beings. He rejoiced to think that, under the solvent of a little doubt, even moral standards might lose something of their finality and dividing power.

We must think of him as the friendliest of men. "*Je m'aime trop*" he admits, but he had the right to boast himself a perfect friend. He lived for this intimate and natural converse with others. It is not therefore surprising that he discovered the literary form which approximates to that converse—the Essay. He was a paragon of friendship. Separated from his friend by death, he tries to discover why they have been so dear to each other, and after describing Étienne de La Boétie in a manner which should lay for ever the suspicion that he was blind to goodness, he can find only the lover's answer, "Because it was I, because it was He."

Yet Montaigne was an "egoist"; indeed, the word was invented by the Port-Royalists to describe him. To most people, since they too are egoists, this should be a comforting thought. "The greatest thing in the world," he wrote, "is for a man to belong to himself . . . this he cannot achieve if he is not to some extent others' also, but it is a bad, unnatural course to lose health and gaiety of life in others' service." Here we have got very far away from the Christian virtue of charity, and there is no sign that Montaigne found any place for that in the scheme of things. Though he could say "crawling on the face of the earth, I cease not to mark in the clouds the inimitable height of some heroic souls," he distrusted heroic aspiration in ordinary men. For them he recommended rather a certain easy way of taking things as more likely to make life better for themselves and others. He was quite sure such a way of living suited him. "I love a gay

and civil philosophy. There is nothing more cheerful than wisdom; I had like to say, more wanton." We must, in short, live among the living, and let the river flow under the bridge without our care, above all things avoiding fear, that great disturber of reason. "The thing in the world I am most afraid of," he adds characteristically, "is fear."

One critic has compared her impression of Montaigne's attitude towards life to the sensation of watching a tiger-tamer "playing with the wild beast Nature. Fascinated, repelled, she looks at him, and fascinated, repelled, we look at her coerced by Montaigne's will." This gives an altogether false idea of him. He seems rather to be playing an easy, a perhaps too easy, game—not a dangerous one. His counsel to us is never to forget that we have roots in earth, and not to be afraid. "The prize for which the soul maketh is not to walk on the heights but to walk orderly. It practiseth not its greatness in greatness but in mediocrity." Montaigne is so enamoured of an ideal within reach of ordinary sturdy human nature that he is often inclined to rank it above those heroic virtues he sometimes wonderingly admired. . . . It is what he understood best himself, for a supernatural view of the world "made too many things compulsory and momentous for his inclination." Of romanticism, of mystical self-reliance and faith in will and action, he had not a touch. He was an Epicurean at bottom, though, unlike Epicurus, he did not turn away from life but faced it stoically. His relish of it was robust and constant, and he had an exquisite sense of human relations.

His first essays are commonplace-books in which he copied down any passages which struck him as he lazily read, also his reflections upon

them. But as time went on these essays began to fulfil more and more completely an avowed intention, that of drawing an impartial portrait of himself. Such an occupation served him in two ways. In studying himself minutely he drew for us a diagram of the human species, and by dwelling curiously upon each experience he made his own life more rich. Thus we learn to know human nature better through knowing him so well, and if we can acquire his habit of self-investigation we too can enrich our lives.

No man ever pervaded more completely his own book. He is there on every page before your eyes. You can watch him; now he smiles, now he shrugs his shoulders; now you are listening to the elaborate elocution of a man of letters, now to the racy accents of a rustic Gascon nobleman.

One word of advice to those who read Montaigne's Essays for the first time. Read the book as they were written, by snatches. There are some writers whom you must read consecutively in order to get their full flavour. Montaigne can be read by fits and starts. Once you have made his acquaintance, his book will always open at the right page; but since it is in the later essays he paints himself most clearly, turn first to them.

GOOD TALK

FRIENDS of mine in the country have sometimes been romantic enough to say they envy, so they tell me, the life I lead in London—what they are pleased to call “being in the heart of things”; and I notice that what they have most often in mind are social opportunities, chances of meeting people whose fame makes them loom gigantic at a distance. They imagine that these encounters, acquaintances, friendships, constantly afford me the privilege of hearing wonderfully good talk. Well, I have met, I do meet, many remarkable people, and, occasionally, I do hear good talk—these things I reckon among my blessings; but they are quite mistaken if they suppose that the occasions on which I meet celebrities are usually those on which I hear the best talk.

Remarkable men and women often practise in company an intellectual economy which would both surprise and disappoint my country friends. Good talk arises out of happy situations, and social occasions do not often produce these, even when the company has been carefully selected with that hope. In the first place, people seldom meet each other at dinners and in drawing-rooms in moods sincere enough to stimulate the mind; and, then, topics change too quickly for anyone to become really interested in them. People are so haunted by the fear of being bored—or of becoming bores themselves, which is worse—that

the talk flitter-flutters about too restlessly. The man or woman who shines most is the one who can say quickest something passably amusing and painful about anything.

I have just read the last literary success. Rather rash; it would have been safer to postpone it for another three months. Think of the immunity I have enjoyed hitherto! Everybody has been reading it, and if I have been asked once I have been asked a hundred times, "What do you think of it?" Hitherto I have been able to turn, "with the most civil triumph in the world," on my interlocutor, and reply truthfully that I have not read it yet. Now, however, I think I am fairly safe; several months have passed since the book's publication, and it is more likely that the same question will be put now about Mr. Aldous Huxley's new novel; and in half a year's time I shall be able to read that also with impunity.

Of course I understand people wanting to know what others think about the books they have read; I often want to myself, but this zest for collecting bare statements of opinion from miscellaneous people puzzles me. "Oh, I thought it *very* good," "Don't you think it is *rather* over-rated?" "I enjoyed it *immensely*," "I was a *little* disappointed"—such comments do not seem worth collecting. They may express what was felt in each case, but they get one no further. The only possible reply is "O . . ." What people seem to want from you is a neat little pellet of an opinion which can be flipped across a table, amusing if possible and repeatable. But I like the company of people who go hacking on at the same subject, even if that is only how to get a lawn in good order. If they go on long enough the subject is usually illuminated, but I notice that most people begin to get bored just when I am

becoming interested. I suspect I was born a bore myself; I prefer so distinctly the persistent to the hop-skip talker. I should very much like to hear two or three people discuss some new book of importance. Though I have heard such a topic mentioned and dismissed hundreds of times, I have seldom heard such a discussion in society. After A. has said he thinks it remarkable, B. has said she enjoyed it enormously, C. has said he thinks it much over-rated, A. has gone on to say that he thinks future generations will take no interest in Shaw's plays, B. that she detested *Lady into Fox*, C. that he has been trying to re-read Henry James: I don't call that literary conversation. It is not conversation at all. I seek two solid, long-winded, labyrinthine-minded, pertinacious bores, with whom to discuss a book, and who, when started on a subject, cannot let it alone.

II

The discreet bow-window in Ebury Street had not arrested my steps as I passed it, although I had *Conversations in Ebury Street* under my arm, and what should have been more delightful than to discuss the book with Mr. George Moore himself? Yet I passed by. In the Mall I stopped and thought of returning, but felt again an inhibiting premonition. Of what? I will amuse myself, I said, in Mr. Moore's own manner, and reflect very slowly and carefully upon this strange reluctance. Strange it was, for could I not have told him that I had enjoyed many charming moments of literary pleasure while reading his book? Besides, had I been obliged to add that the criticism in *Conversations* had fallen far below the interest of the criticism in *Avowals*, was not Mr. Moore the one author of my acquaintance who really

could discuss with literary detachment what he had just written? In the course of colloquies, held in that very room, but colloquies certainly less urbane and Landorian than those recorded in the book, how often I have been struck by this surprising suspension of vanity in him just at the very point where men much less vain invariably grow touchy. No craftsman ever forgot himself more completely in his work. Issuing late at night into Ebury Street I had often said to myself: "Now I know where to go when I want to be reminded that the art of writing is important."

I had an excellent excuse, too, for calling, for I appeared in *Conversations in Ebury Street* myself, though only, I am sorry to say, as the most negligible and futile of those interlocutors who attempted to put in a good word for the work of Thomas Hardy. Still, it was an excuse, and I wanted, too, to lodge a gentle protest at being made to say in the book that Landor's *Pericles and Aspasia* was the noblest work in the English language. And yet I had passed by! Why? Alas! I could not, in his own manner, luxuriously delay coming to a conclusion. No sooner had I asked myself the question than pat the answer came: "Yes, he *is*, sublimely, detached from his own stories, but what a bate he gets into over his estimates of other writers." There's the rub; I shall have to listen to conclusions to which I cannot assent, while my respect for the artist will withhold me from the relief of shouting, "Bosh!"

In the book I had just been reading Mr. Moore, Mr. de la Mare, and Mr. Freeman are discussing what is the test of pure poetry, and Mr. Moore suggests that they should compile an anthology. What is his criterion? That a true poem is something which a poet creates outside his own personality. Ignoring the vagueness of such a test,

for whatever a man creates is coloured by his personality, it is clear that Mr. Moore means that subjective poetry is not "true poetry," because Mr. de la Mare next observes that "many of the most beautiful poems in the language would have to be barred—Shelley's *Lines Written in Dejection in the Bay of Naples*, for instance." But it is when Mr. Moore turns to explaining where he will discover, and where he will not discover, examples of true poetry, that his reader—and if the reader, how much more his listener!—will find himself thrown into a state of incredulous dismay. "Milton does not abound in objective poetry, Pope still less, but we shall find several poems that come within our definition in the *Songs of Innocence*, none, I am afraid, in the *Songs of Experience*." Imagine a respectful visitor, many years his junior like myself, being left with a statement like that on his hands! Milton a subjective poet! who with the exception of few brief restrained references to his own feelings as a blind and lonely man, is the most objective poet in English literature, unless you range beside him—could my ears have deceived me just now?—Pope or Dryden.

Mr. Freeman is then made to remark: "We shall find very little in Keats," and Mr. de la Mare to add: "I doubt if we shall find anything" (I suspect this attribution); while Mr. Moore continues: "Keats never attracted me . . . I think of him too frequently as a pussy-cat on a sunny lawn." Imagine your feelings if a venerable writer, for whom you felt an admiration which prevented you from being visited by the humour of Ham, told you that what strikes him most about Keats is a resemblance to a curled and comfortable cat!

What is the explanation? The reader will find it in the confession, recurring in Mr. Moore's

later personal works, that he has lost the power of reading. I doubt if he ever possessed it. On page 175 you will find a reference to a certain Augustus. We are given only one remark of his, but, as in the case of the one recorded utterance of Juliet's nurse's husband, it makes us wish to know more of Augustus. Whenever Mr. Moore used to expound a general idea, Augustus, after listening to him, invariably asked: "What about the poor chap in the café?"—for it was his joke to assume that Mr. Moore was entirely café-educated. Substitute conversation-educated, and there is much point in the joke of Augustus. Now education by conversation leaves a good many gaps. Nothing is more characteristic of Mr. Moore than his discovering the Bible and *The Sentimental Journey* when he was past sixty, and his amazement at the density of a world which had not drawn his attention to their merits. He has an independent, whimsical, creative mind, and the truth is he has always read to stimulate his own talent. The writer who helps him most at the moment is consequently exalted above all others. At one time it was Landor; some years back it was Flaubert. This is, of course, not only legitimate but wise in a creative writer, but it is not a proceeding which trains the critic, who must yield himself to an author, and not follow his own fancies across the page, or hunt for corroborations of his own literary methods in a book. Mr. Moore laughs at me for being anxious about his literary education, and for writing "a long, pathetic letter," urging the merits of Thomas Hardy. I am sure the pathos was not misplaced. He changes his view of authors when his own work takes a new direction. He once dismissed Stevenson as merely the smartest young literary buck in the Burlington Arcade; now he speaks of his "radiant page," for Mr.

Moore happens to be now more interested than he was in the craft of constructing sentences. He has read Thomas Hardy in the spirit in which he read Newman, when he read Newman in order to discover that no Catholic could write. Of course Newman is a good writer. But Mr. Moore discovered some weak sentences in the *Apologia* and cried: "There you are!" The results of this method are naturally surprising. I might apply it with the same results to Mr. Moore himself, to Pater, to Landor. I recollect an unfortunate sentence or two in "The Confessions of a Young Man"—one comes back to me, about a piano leaning its melodious mouth towards a lady. Pater was not happy when he described Marius as being "always as fresh as the flowers he wore," a phrase more suitable to a society paragraphist; Landor's monumental skittishness is often utterly unworthy of him. Mr. Moore, is, of course, absolutely without literary snobbishness. In this book he draws attention to a delicious passage in *Agnes Gray* where one vulgar little girl appeals to her sister to bear her out that she looked beautiful at the ball. "Middling," replies the younger. We are grateful to Mr. Moore for pointing out the delightful quality of that bit of dialogue, but when he goes on to declare that *Wuthering Heights* is poor compared to the novels of Anne Brontë, gratitude is not what we feel. ✓

III

I am exceedingly fond of controversy, not as a participant, but as a spectator. Indeed, I have never taken part in a dispute which was long enough to be called a controversy. My own exploits in that direction have never amounted to more than a brief blow, parry, and counter-blow, but I have

watched others at the game ; I imagine that I have learnt something about the noble art of self-defence. One's method should vary with the strength of one's case and the character of one's opponent ; that is the basic principle. For instance, suppose you have an unanswerable point to make, and this point, though it does not cover the whole of your case, is the most central one in the controversy, the character and gifts of your adversary should make you decide whether it is wiser to confine yourself to that single point, or whether you had better go for him all round and try to finish him up completely. (I am taking for granted that on all other points except the central one you have not such an immediately convincing case.) It will also depend upon his character and gifts how far it will be prudent to attempt to show that he is a coxcomb, an idiot, an ignoramus or an ignominious person. It is unsafe to stray beyond your best point when you are dealing with an adversary of great mental agility. He will meet your weaker points, and pass over, as comparatively unimportant, your vital contention. He may indeed succeed in answering your minor arguments so well that the world at large will get the impression that the fight was drawn on "points," when in reality he ought to have been counted out.

I know it requires great self-control not to caper about triumphantly after you have delivered a knockdown blow. Yet the more exuberantly triumphant your war dance round the prostrate body, the more likely are you to lay yourself open to a counter-blow, and the more delighted the spectators will be at seeing the tables then turned against you. And if you kick him when he is down, then, if he is a wily controversialist, he will instantly revive ; his spirits will rise, and his wit, if he has any, will be displayed to the delight of all

beholders. If, on the other hand, you have a weak case, you cannot do better than to lead off by being insulting. This may make your adversary lose his hair, and, forgetting he has the best case, he will perhaps turn the argument into a scrap in which you may be able to hold your own. But, if you have the best case, it is folly to let him stray away from that case into personalities.

IV

In a book on spectres by Le Loyer, written in 1586, I came on the following passage :

“Of all the common and familiar subjects of conversation that are entered upon in company, of things remote from nature and cut off from the senses, there is none so ready to hand, none so usual as that of visions of spirits, and whether what is said of them is true. It is the topic that people most readily discuss and on which they linger the longest because of the abundance of examples, the subject being fine and pleasing and the discussion the least tedious that can be found.”

The same might be said of conversation to-day, only perhaps all would not agree that such conversations are “the least tedious.” If not tedious, they are at any rate sometimes embarrassing; one is left with such startling statements on one’s hands. Still more inexplicable than the spiritualistic wonders retold every day, is the way in which people take them. One dines out; one sits next a lady whose aunt has seen a table levitate to the ceiling, and a medium walk out of one top-storey window and in at another. The lady herself has been to a necromancer in Bond Street, who has told her things about herself which he could not

possibly have known by natural means, and others about her future which she is convinced will come true.

This starts off a man at the other side of the table telling, with impressive reserve, a story about a friend to whom a little grey woman appeared one night warning him that he must never leave the country—his friend thought nothing of it, but he went down in the *Titanic*. One then asks the lady if she has sat with her aunt's medium, and discovers that she not only has not done so, but does not even know his name. Fancy having had within grasp the chance of seeing a man walk on air and not seizing it! What is flabbergasting is the casual way in which people take experiences which ought to shatter that whole framework of reason to which we trust whenever we turn to the right to go out of a door on the right. If one evening a necromancer drew the moon out of the sky for me, and it turned out to be a flat silver platter about the size of an offertory-plate—this would not be a whit more disconcerting than seeing a man walking upon air—I should be beside myself until I had assimilated the occurrence to my general conceptions of the world. What makes me suspect that people really do exaggerate a little when they report marvels (it is so hard to astonish!) is not the apparent frequency of such events, but the comparative scarcity of gibbering sceptics.

I don't think the social atmosphere was always as unfavourable to good talk as it is at present. People used to be more patient; dread of the monologue or of prolonged discussion was not so intense; the ban upon the longer story was less severe. I can hardly doubt that some of the famous

talkers of the past like Coleridge, Carlyle or Oscar Wilde, would still dominate their company; but I am less certain that they would be so much admired and encouraged.

The fame of talkers, alas, is as unsubstantial as the fame of actors. The recorded scraps of old discourse give us little sense of the brilliance of conversation in the past—as little as the specimens which travellers bring home suggest the fertility and wonder of distant lands.

The tradition of Coleridge's amazing and unique powers of discourse is part of the history of English Literature. His talk has been described by many contemporaries. Carlyle's description, too well known to quote, in the *Life of Sterling*, is the most famous. But we must remember that this is a description of his talk in Highgate days, when a preaching tone had crept into his voice, and he was less inspired and more diffuse than when in his youth he astounded Hazlitt and De Quincey. In youth and middle-age talk had been his refuge from disappointment, bewilderment, and shame. In the glow of it, in the wonder he excited, he could forget that he was a gigantic failure (how absurd this verdict sounds now!) in his own eyes, and in those of all who loved him. But under the care of the good Gillmans he had become more or less reconciled to his own nature, while his allowance of opium had been restricted to an amount which gave exhilaration and relief, but did not incapacitate. A modern critic is right when he says "he had been so ecstatic a talker because he was in flight from a fiend, and when the fiend ceased to pursue him he tended to lapse into a sententious amble."

Carlyle, when he visited Highgate, had too many undelivered lay sermons in him to find satisfaction as a passive bucket to be pumped

into. But though he did not admire, he wondered at "those sunny domes, those caves of ice" which Coleridge built in air. "Glorious islets, too," he says, "I have seen rise out of the haze; but they were few and soon swallowed in the general element again. Balmy, sunny islets, islets of the blest and intelligible."

There is a half-forgotten, anonymous little book called *Conversations at Cambridge*. The author was an old school-fellow of Coleridge, C. V. Le Grice, who is mentioned by Lamb in that essay on Christ's Hospital which contains a much more sympathetic description than Carlyle's of Coleridge's extraordinary gift. In the summer of 1833, a year before his death, Coleridge paid a visit to Cambridge. In 1793, distracted by debt and love, he had run away from Cambridge and enlisted in a dragoon regiment. "My emotions," he wrote, "on revisiting the University on this occasion were at first overwhelming. I could not speak for an hour; yet my feelings were, upon the whole, pleasurable and I have not passed, of late years at least, three days of such great enjoyment and healthful excitement of mind and body." He was put up in Trinity. He did not rise till the afternoon, when he held a crowded levee, and he seems to have talked all night.

It is this talk which Le Grice endeavours to recapture. Unlike Carlyle, he cannot imagine anyone wishing "to punctuate by a single question that rich musical discourse." Although he took notes while the poet's voice was still in his ears, it is seldom we can hear that voice. Sometimes, however, we do: "How the heart opens at the magic name of Milton! Yet who shall, in our day, hang another garland on his tomb!" I fancy that is verbatim. It has Coleridge's soaring effectiveness. But when the reporter goes on, recording

the excellent criticism which follows, the words have no longer a spoken quality, only a stately tameness. It is almost in every case only in the exordium we hear the living voice: "And why should I not call Taylor a poet? Is not 'Holy Living and Dying' a sacred and didactic poem in almost as wide a sense as the 'Commedia' of Dante? What bard of ancient and modern times has surpassed, in richness of language, in fertility of fancy, in majesty of sentiment, in grace of imagery, this Spenser of English prose?"

The great crystal has begun to swing. He divagates; he quotes, at a length which attests the possession of an astonishing memory, prose passages equal to "the sublimest poetry," adding: "How pleasant it would be to go on thus, if my memory would enable me, gathering choice specimens of sublimity, pathos, and picturesque truth; collecting the precious stones of which his charms are strung; for even his ornaments are never chosen for their lustre alone; and in the most gorgeous festivals and riotous enjoyments of his imagination, a Hand is perceived writing on the wall. Never did a soldier of the Holy Cross issue forth in a more gorgeous equipment to fight for the Sepulchre of Christ. But the resplendent sword is of celestial temper, and that costly armour was mighty against the dart of the enemy as any coat of mail; it protected while it shone." You must imagine the face of the speaker, rapt, radiant, moist—his eyes "sending out great signals." "I am glad," wrote that matter-of-fact Miss Martineau, "to have seen his weird face and heard his dreamy voice; and my notion of possession, prophecy—of involuntary speech for involuntary brain-action has been clearer ever since." Thus Coleridge talked. To talk like that now would be like singing at dinner.

VI

Carlyle's talk, though utterly different from that of Coleridge, must have been as remarkable. He, too, was an oratorical talker, but he excelled particularly in vehement denunciation, in fantastic and vivid bluster. There were sardonic surprises in it. I heard George Meredith imitate him once ; it was a *crescendo* of picturesque curses which ended in a shout of laughter, laughter which subsided gradually into a wistful stillness, while Carlyle would slowly rub his hands up and down his shins and sigh, "Ah, weel, ah, weel." His chief intellectual fault as a talker seems to have been that, according to him, no one could be actively interested in the progress of the species without being off his balance and in need of tenderness from his friends. He would speak of himself as though he were all his life compelled to the dismal necessity of ransacking the graves of the dead in order to find some poor spangle, still untarnished, of nobility in human nature. This must have been tiresome in the long run. "You wondered at last," Henry James, Senior, said of him, "how any mere mortal got legitimately endowed with a commiseration so divine for the inferior race of man." There was clearly more of the play-actor in his talk than there was in Coleridge's. But what a splendid performance it must have been ! And how amusing ! What gibes he flung about him ; now at the Quaker orator, Bright—"pugnacious, cock-nosed John" ; now at Ruskin—"a beautiful bottle of soda water" ; now at Mill, the Saint of Rationalism—"saw-dust up to the mast-head." A humorist, you see, in the guise of a Jeremiah ! There were often stirring scenes in the little sitting-room in Cheyne Row ; perhaps a merciless mellay

if a belligerent with sturdy opinions of his own dropped in. At the bare mention of certain topics Mrs. Carlyle would nudge a sympathetic neighbour and whisper in dread, "Now for the deluge." Down sure enough it would come, hot and heavy, for an hour or more. But nothing exasperated Carlyle so much as the reverential readers who offered devout and grateful homage. Such adorers reminded him too intimately of the essentially histrionic and humoristic nature of his genius beneath its apocalyptic cloak: their simplicity was an insult. They were intolerable bores; and, as a lighthouse-keeper finds lying after a storm, upon the platform round the lamp, birds which have dashed themselves against it, so, he used to say, did he expect to find every morning the bodies of several dead Americans on his doorstep. Even if his fame as a talker had not survived, even if his spoken phrases were not still flying from mouth to mouth, from his style alone, from its vehemence and its vividness, posterity would have guessed that Carlyle must have been a glorious converser. His talk must have been inferior only to his best prose.

VII

With regard to Wilde's talk, tradition is unanimous: it was more surprising than his writing. I have often interrogated those who heard him. Wilfred Blunt and Max Beerbohm both told me that, in their experience of talkers it was a case of "Oscar" first and the rest nowhere. The variety of his range, too, was astonishing. He excelled in nonsense, in repartee, in description, in narration, in sentiment; and he excelled too in that general kind of talk, ranging over biography and history, in which for the most part men like Lord Morley, with well-stored minds and with

experience in affairs, are easily first. Wilde was also an exceedingly amiable talker, uncompetitive, and immensely appreciative of other people's contributions. That remarkable biography, *The Life of Oscar Wilde*, by Frank Harris, is full of convincing records of his talk. You will find in a little book by Laurence Housman, *Echo de Paris, A Study from Life*, an account of a restaurant conversation which took place after Wilde's release from prison. Twenty-four years is a long time to carry talk in one's head, even Oscar Wilde's; but it can be done, and probably Mr. Housman took notes at the time. The prelude to the luncheon is characteristic. Oscar Wilde is a little late; he enters with deliberate ironical reference to his imprisonment. "But what are two minutes in three years of a disintegrated lifetime? It is almost three years, is it not, since we missed seeing each other?" There is a slightly uncomfortable pause, when, as it were a minstrel throwing back his cloak to pluck a few chords upon his instrument, the famous talker begins. What he says is not in substance very remarkable. It is the grace, finish, and flexibility of the performance that delights. The suggestion which he makes that Carlyle lost his chance of producing a permanent work of art greater than his *French Revolution* by choosing Frederick the Great instead of Napoleon is interesting; also the suggestion that Carlyle did so because he worshipped success: "I have come to see that St. Helena is, for a world which follows Cæsar and not Christ, the greatest place on earth next to Calvary." Then the significance of failure (he is thinking of himself) becomes the main theme of his discourse; but the charm and, I am sure, the verisimilitude lie in the skill with which the talker keeps modulating into a lighter key and out of it again, backwards and forwards. I feel sure

GOOD TALK

that it was this faculty which made Oscar Wilde's conversation such an astonishing performance. I know no living talkers who equal this, or who seem to take conversation seriously as an art. Good talkers nowadays are proud of taking no trouble. It is the fashion of sincerity.

The two talkers I have known in recent times whose sentences would probably read best if written down are Bernard Shaw and Sir Edmund Gosse. The only talker I have heard who in conversation will launch the high poetic phrase is Yeats. He will say that "the music of Heaven is full of the clashing of swords" without seeming conscious that others might conclude that he was talking for effect. I like that myself. And even if he were talking for effect, I should, for my part, only be the more grateful for a fine ambitious phrase. When I meet remarkable people whose company is coveted, I often wish that they would show off a little more.

CASTLES IN THE AIR

SINCE I mean to write upon Day-dreams, let me begin by indulging in one : I am ordained, and about to preach my first sermon. Of course it is most important that I should prove myself to my new flock a physician of souls, and no ordinary one. As I shake out the folds of my surplice, all eyes are fixed upon the interesting young preacher. What is my text ? I will not choose one which will offer an excuse for lashing poor humanity where the strokes of moralists have fallen so frequently that the place has become hard and cicatrized ; that will not serve the purpose. No, to establish my power I must discover a disquieting intimacy with weaknesses so shamefully silly that they are rarely spoken of, even among friends. I catch beneath the brims of glamorous hats earnest glances, in which curiosity and reverence are delightfully mingled. Ah ! young women, you will wince first, but before I have done, yonder grave church-warden, whose mind, to judge from his deportment, never strays from the matter in hand, whether practical or holy—he too, and others like him, shall feel my probe. My text is already given out : “ Behold, this dreamer cometh.”

Alas, the sermon itself is too long to report in these pages. Besides, I am not in Holy Orders, only a critic who must choose his text from secular books.

As a reader of novels, I have often been struck by the fact that modern novelists, even those who set out to display the secrets of the recesses in human nature, never seem to be aware of the extent to which men and women, sensible matter-of-fact men and women, indulge themselves in building castles-in-the-air—castles of such absurd, fantastically-improbable architecture that the Prince Regent's pavilion at Brighton is a sensible edifice compared with these. It is the commonest form of dram-drinking. And yet, if we were to believe these novelists, who pretend to hold up a glass to human nature, we should be persuaded that men's and women's thoughts and emotions habitually spring from rational expectations and actual events. Nothing of the kind. The average human being's imagination is employed almost perpetually in feeding a preposterous vanity upon food which, though airy and insubstantial, has apparently a certain nourishing quality. His or her interests and rational ambitions are only attended to in the interstices of a long wool-gathering process. When anything disagreeable occurs, if the remedy does not lie to hand, they proceed to nestle down in a little warm nest of dreams. The hygienic property of work and of society lies almost entirely in their being preventatives of day-dreaming, for this habit, if it gets strong possession, reduces the mind to a condition in which anything that really happens hardly affects it; to rouse such a person is like churning skimmed milk, you may stir and stir and stir without any result. If introspection fails to convince any reader of the truth of this charge (a wide shot which hits half the world), let him reflect upon these additional facts, which are symptoms of the fantastic prevalence of the castle-in-the-air habit. Think how many a contented

failure you have known, who yet, you are sure, has neither stoicism nor romance enough to be one of whom it could be prophesied : *cantabit vacuus*. What is the secret of their placid resignation ? Dreaming.

Look at the type of literature that is really widely and profoundly popular. Are not the novels which run like a prairie fire through continents, and against which the cold douche of criticism is an ineffectual hose—are they not made of the same stuff as castles in the air ? Are they not reflections of those idiotic, egotistic dreams of satisfied vanity, to which their voracious readers are ashamed to confess ? Our fiction is on the average so bad because its writers mistake for the genuine impulse to write, the desire (coupled, of course, with the honest hope of royalties) to fondle their own dreams of how splendid it would be to appear like their hero or heroine in such intensely gratifying circumstances. If by any chance you are snowed-up or rained-up at an inn, with a set of trashy novels as the only possible means of distraction, and you are not in a mood to let your mind flow with the author's current, some amusement may be derived from divining in his book the nature of his day-dreams.

When you meet the crowd stepping westward along the pavements, watch the faces of the solitary people hurrying by. Do not be deceived by portentous, magisterial appearances ; that wheezy old gentleman in a top-hat is really crowned with an all-England cricket-cap, and has hit to the boundary three times running in the most critical test match of the year ; that most improbable person has saved the life of a famous beauty under the most heroic circumstances. Watch his lips, he is talking to her now. That young clerk (England is invaded, her fleet is sunk) has invented a marvellous submarine, and at the last moment, when

all seemed lost, he has saved his country and blown the enemy into smithereens. He is replying now to his own toast at a great banquet in the Mansion House. That little woman with a prayer-book in her hand, demurely hurrying as the church-bell rings more quickly on the hour of the afternoon service, has reared a still higher-towering aerial edifice. It is the day of the Last Judgment: proceedings are interrupted by a gratifying duologue between her and the Maker of the Universe: her landlady and friends who have neglected her had better take care—her magnanimity will on that day be overwhelming. Dreams, dreams, “we are such stuff as dreams are made on.”

II

Of course, I build airy palaces myself, but those fantastic, pinnacled structures soon grow top-heavy, and are apt to crash. It often pleases me instead to day-dream on a modest scale; to build not palaces, but cottages in the air. How delightful it would be, if—that conditional particle is the foundation of day-dreaming—if half-a-crown were worth what it was before the war, and *if* my desires were much circumscribed, and *if* my obligations were much restricted, to spend my days in research at the Record Office. The fee for rummaging among old papers used to be (I think I am right) half-a-crown an hour. I like to imagine myself, inconspicuously but neatly dressed, oscillating between the Tudor-esque building in Chancery Lane and a small suburban home. But I stipulate, in addition to these humble earnings, for a modest private income, say a pre-war £300, safely invested. It would ease my mind, too, if my small residence, with one umbrageous tree in the back-garden, could be a freehold. Then—but, perhaps, you do not realize the charms of such an existence?

EXPERIENCE

I will not expatiate upon the blessedness of modest security—read Horace, Pope, Robinson Crusoe; but upon the romance of my imaginary occupation. Dull and monotonous? Yes, undoubtedly it would be so, but that is part of its romance. If looking through, deciphering, collating old papers were not a task scaring to the light-minded and trying to the impatient, where then would be the glory of its little triumphs? I call them little, but they can be catastrophic. They can shake the foundations of history, humble biographers, and scuttle, with a few words, the most proudly-sailing generalizations afloat. When Herbert Spencer once confessed that he had secretly written a tragedy, Huxley immediately cried out, to his amazement, that he knew its theme: “It will be the story of a beautiful theory killed by a horrid ugly little fact.” I know a famous art critic whose knowledge of old masters, little and great, is so thorough and minute that his ascription of a picture to such and such an artist is next best to a signature. I do not suppose that he is afraid of contradiction from any connoisseur alive, for his own reasons are, he knows, more likely to be cogent than those of others. But it is a chancy thing, this business of attribution. Though he need fear no other critic clad in shining learning, I think he goes in some fear of those indefatigable searchers and fumblers among old archives who any day may turn up a receipt, a bill, a letter, knocking the bottom out of the best-grounded attribution—and a couple of noughts off the value of a picture.

III

Rasselas is full of discourses and aphorisms which stick in the memory: “He who has nothing

external that can divert him, must find pleasure in his own thoughts, and must conceive himself what he is not ; for who is pleased with what he is ?"—the sage Imlac is speaking, and he goes on to expatiate on the danger of day-dreams, to which the solitary are addicted and all men are inclined. Of the day-dreamer he says :

"He culls from all imaginable conditions that which for the present moment he should most desire, amuses his desires with impossible enjoyments, and confers upon his pride unattainable dominion. The mind . . . unites all pleasures in all combinations, and riots in delights which nature and fortune, with all their bounty, cannot bestow. In time, some particular train of ideas fixes the attention, all other intellectual gratifications are rejected, the mind, in weariness or leisure, recurs constantly to the favourite conception, whenever she is offended with the bitterness of truth. By degrees the reign of fancy is confirmed ; she grows first imperious, and in time despotik."

At the close of Imlac's discourse the Favourite resolves that she will no more imagine herself Queen of Abyssinia, the Princess that she will no more play the enchanting shepherdess in her waking dreams, the Prince that he will no longer construct ideal Utopias with himself as the founder of them. Of course they never kept these resolutions.

In my day-dream sermon I thought my text, "Behold, this dreamer cometh," would hit practically every other person, including the most unlikely people. Was I wrong about this almost universal addiction to the day-dream habit ? Perhaps there are grown men and women who never imagine themselves in circumstances gratifying to vanity, soothing to care, or satisfying to the heart ? When

I meet exceptionally concentrated, busy, imposing, eminent, successful people—the sort in whom the childishness and wild extravagance of day-dreaming would be utterly incongruous—I should like to ask them how often they indulge in these solitary pleasures, and if their air castles, when they build them, are extraordinarily silly. I strongly suspect the answer would nearly always be, if they told the truth—which they never could—in the affirmative. But it is only a guess. I wish some correspondents who have the knack of asking really intrusive questions would collect a few statistics for me, and thus either corroborate or dispel this suspicion. Dr. Johnson himself, whom from his demeanour and his massive common sense no one would have suspected of such weaknesses, was by his own confession an inveterate day-dreamer. Indeed, he was terrified of this tendency in himself. It is not only in *Rasselas* that he inveighs against it. He often recurs to the subject; he even valued company and business very largely as safeguards against indulging, perhaps to the point of delusion, this powerful propensity. His moral sense was shocked, too, at the quality of the delights which solitary reverie presented to him.

Samuel Butler told me that he was an inveterate day-dreamer. He used to pull himself up by murmuring, "Oh, Christina, Christina." The character of Christina, Ernest Pontifex's mother, in *The Way of All Flesh* was the first character, I think, to appear in fiction in whom the part that day-dreaming often plays in a life was accurately reflected. Her reveries are winding and long, but here is an inch of one of them :

"And if Ernest got into Parliament—so young too—there was nothing to hinder his being Prime Minister before he died, and if

so, of course, he would become a peer. Oh! why did he not set about it all at once, so that she might live to hear people call her son "my Lord"—Lord Battersby she thought would do very nicely, and if she was well enough to sit he must certainly have her portrait painted at full length for one end of his large dining-hall. It should be exhibited at the Royal Academy: "Portrait of Lord Battersby's mother," she said to herself, and her heart fluttered with all its wonted vivacity."

One of Butler's harshest strokes of irony was the epitaph he allowed her husband to put on her grave: "Blessed are the pure in heart, for they shall see God."

My friend Whynot, with whom I can discuss almost anything, tells me he has frequently slain, in imagination, every one to whom he is, and has been, most attached, simply as a necessary and logical preliminary to the setting up of some scene, or to the establishment of some condition of circumstances, in which it gave him pleasure to imagine himself playing a part.

"In my youth," he told me, "I used to recover a sense of what I was doing with a stab of shame, but long before I became the man you know, I had ceased to reproach myself beyond the point of calling myself a damned fool. Sometimes I could descry a reason for my murders not so discreditable to my heart. The death-bed was only a condition of calling up a scene in which I could express the affection that was in me; to do myself justice, it was often I, and not the loved one, whom the dramatist of my day-dreams decided to place *in extremis*. But," he added, raising his voice almost to a shout, as he always does when owning up to anything of which he is ashamed, "*but many*

a time the motive has been merely mercenary, or vanity—the desire to imagine myself the object of sympathy or admiration.” Yet Whynot has not a bad heart, and he does not strike one as vain.

The cures for day-dreaming may be many; I know of three. One is Dr. Johnson’s—constant occupation and company. The second is to secure a little *real* satisfaction of desire. It may be a petty achievement, far too small to figure in the carnival of a day-dream, but the glow it throws dims glories imagined, as the dullest of dawns a festal illumination. The third is to go on piling up fictitious triumphs to such a fantastic height that they crash from the weight of their own absurdity, or, in other words, to make yourself rapidly sick by eating the sweets of imagination by the handful. Afterwards the tone of your stomach revives, and your appetite for solid but meagre realities recovers.

SNOBBISHNESS

PERHAPS some of my readers also received a copy of the prospectus which I found enclosed in a large envelope of superfine quality on my breakfast table the other morning. The drift of it was unusual. In this document, Mr. Ponde, M.A., of Harley Street, announced that his consulting hours were 10 to 1 and 3 to 5, and that between those hours he was at the service of anyone who wished to consult him about whatever uneasiness they might feel with regard to their social position. "It is not uncommon," the prospectus goes on, "for those whose accomplishments, education, incomes and good sense might be expected to render them immune from such uneasiness, to suffer intermittently, or even chronically, from distressing doubts as to their own claims to gentility, especially in the company of people who set store by such distinctions. Their trouble has been, in most cases, much aggravated by reserve, such matters being regarded as too delicate and invidious to be touched upon in conversation. For although the claims of the absent to be lady or gentleman, as the case may be, are often brightly discussed among their friends, the person concerned derives little benefit from these discussions; on his or her appearance the conversation is too often turned into other channels. On the other hand, free communication on the part of the patient of his

own sufferings and symptoms—the open-mind cure—wide experience has convinced Mr. Ponde to be the first step towards healthy recovery. He therefore holds himself prepared to examine into and advise all upon such cases between the hours mentioned above. The strictest confidence is, of course, guaranteed.”

Enclosed were a number of testimonials announcing complete recovery from fear of flunkys, unintentional condescension, unwilling humility, chronic oblivion of unsuccessful relations, and cases of the most virulent compound snobbishness. One well-known novelist writes: “Since undergoing three weeks’ treatment at the hands of Mr. Ponde, dining-out in fashionable houses has been an *unmixed* pleasure to me. . . . I no longer experience a painful acuity of delight on such occasions, nor on returning home to my wife and flat do I suffer from any wistful sense of depression. . . . The scenes of social life in my books have gained, too, in verisimilitude. Such phrases as ‘undefinable charm,’ ‘easy breadth of manner,’ ‘gracious frankness’ no longer come with undue frequency from my pen; nor have I lately let slip such sentences as ‘Certainly,’ he replied, ‘wiping the duchess’s cream from his moustache.’”

A business man of great resources and wide influence also writes: “Thanks to Mr. Ponde, I am a richer man than I should otherwise have been. I have not only refused a peerage, but I am much harder to get round. It is almost impossible now to persuade me to employ idle young men of good connections to the detriment of my own business. The bracing effect of the Ponde treatment upon my own deportment may be illustrated by an extract from a letter written by my youngest daughter to her brother at Oxford. ‘Papa,’ she writes, ‘is changed. He no longer fusses about like

a little dog that has been scratched behind the ears when Lady X. drives over here in the afternoon.' ”

Although Mr. Ponde's fee was high, two guineas for a first consultation, my curiosity was so strong that I felt that I must visit this interesting specialist. I flattered myself that I stood in no need of his professional advice; but half-an-hour later, on ringing his bell in Harley Street, I confess I felt the qualms of a patient. As the man-servant opened the door my nervousness was increased by having to step aside for an elegant lady hurrying out in a state of unmistakable agitation. She was adjusting her veil, on the meshes of which a tear trembled, and I noticed in the palm of her little gloved hand, squeezed into a tight ball, a tiny, damp, cobwebby handkerchief. I began to conceive a distinctly alarming idea of Mr. Ponde.

In the waiting-room, decorated with the usual massive bronze ornaments and large, inexpensive oil paintings, sat two other patients, one of whom lowered his paper for a moment to throw a penetrating glance at me as I entered. After a few minutes, this one—an elderly, grizzled man, with pince-nez, and perfectly dressed—was silently summoned from the door. He got up with prompt determination, crossed the room with a quick military step, and left me alone with a pair of legs and the broad sheet of the opened *Times* facing me in the chair opposite. The boots conveyed nothing; the trousers were black. Could he be a clergyman? I gave a barking cough, but the large clean hands only shifted their grasp upon the crackling paper, and raised it a little higher, displaying a well-filled waistcoat and a watch-chain. However, I thought, he must reveal himself presently, and I relapsed into wondering vaguely what could be the matter with him. At last the

front door shut again and the man-servant appeared; but to my great disappointment my companion did not move. "I have a definite appointment at a definite hour," said a sonorous voice behind the paper. "I prefer to wait."

The consulting-room was large, with dark corners. Mr. Ponde, a pale, beardless man of forty, was standing before the fire with his coat-tails up. Without shaking hands, but with a reassuring, almost humorous smile, he motioned me to a great chair, on which the full light from the long garden window fell, and he sat down himself at a large writing-table. Taking from a drawer a heavy indexed volume, he asked me my name and address, the amount of my income, my father's profession, my own, if I was married, who my grandfather was, my maternal grandfather, whether I was richer or poorer than my parents; and while I was answering these questions he looked at me narrowly yet not unpleasantly. I was just explaining that my wife's father imported bananas when he said quickly: "You should be more careful about your dress; but I will give a few practical hints presently." After having jotted down my replies in the ledger, he got up and stood again before the fire, this time warming his hands and with his back to me. "Well," he said heartily, "I have seen very little of you, but I can tell you one thing positively: you need not change your address. You can stand Pimlico. Now tell me your symptoms." Oddly enough, I was not prepared for this. Quite a long pause followed.

"I know," he began in a steady, kind voice, "these things are difficult to tell, but you must treat me with the same confidence as you would your medical man, or I can do nothing for you."

As I could not collect my wits and remained silent, he went on: "However strange and

delicately humiliating your own case may seem to you, let me assure you it is not an exceptional one. My experience enables me to tell you confidently that others whom you would not suspect have felt the same. Come, I will ask you some questions. Do you, for instance, feel more embarrassed—excited, shall we say—when actually in the company of your social superiors, or afterwards on the way home? An important temperamental difference is involved, and I must be quite clear as to the category to which you belong, if I am to diagnose your case and prescribe for you.”

At this point, I could not help telling him that it was no uneasiness whether I was, or was not, a gentleman that had brought me to him, but merely curiosity to hear what he would say. He smiled. “Do you know thirty per cent of my patients tell me that?” This, I confess, staggered me, and a dreadful misgiving crept into my mind. “Could I all the time have felt unconsciously that. . . ?” But his scepticism nettled me, and I told him rather tartly that a man of my descent, with a pedigree going back to a Giant Mog who lived A.D. 202, could not possibly doubt his gentility or suspect himself of being a snob.

“There you make a great mistake,” he said quickly. “Some of the most difficult cases of diffident snobbishness that come under my notice are precisely those in which a lively sense of lineage is combined with either poverty or a position to which no dignity is attached. Oh, in private, such people think themselves as good as anybody, and don’t worry their heads about such matters, but in the company of important personages they are apt to be as uneasy about themselves as the most conventional parvenu, and, on the opposite sort of occasion, as insufferably condescending. My usual method of treating such

patients is to make them fetch their pedigree and to point out that as a matter of creeping fact they are as much descended from women as from men. In forty-nine cases out of fifty pride of birth collapses under this test. I have had hundreds of letters from patients, thanking me in glowing terms for having removed secretly-nourished pretensions which prevented them from behaving to everybody in a natural straightforward sort of way. But, of course, when the descent is unimpeachable on both sides, the case requires more delicate handling. The most difficult case of diffident snobbishness I think I ever treated, was that of a great-nephew of a Duke who happened also to be a dentist; he died. Indeed, the poor relations of great houses are, alas, almost incurable, and when they have inter-married, I usually say quite frankly, 'Dear Madam or Sir, you are wasting your money; I can do nothing for you.' You know these folk, how rude and disagreeable they often are to the people they meet staying at the great house on their annual visit there, and how they work the head of the family for all he is worth the rest of the year, till his name becomes a perfect bugbear to their neighbours at home.

"Your case, however, is happily different, but your mention just now of Mog (do not wince at my flippancy) suggests that you might find it salutary to follow up some of the female branches of your pedigree. Anyhow, try it, try it by all means. But look here, I must give you a warning. It is, indeed, part of the prescription. Don't, in consequence of your investigations, pull yourself together like a man who looks facts in the face and proclaim yourself heartily 'middle-class.' If you catch yourself doing that, believe me, you are not cured. *Plus ça change, plus c'est la même chose.*

And a word of counsel with regard to criticizing other people. Don't think that snobbishness in all its forms is a disease peculiar to any one class ; it is sporadic. Let me disabuse you of the dangerous idea that it is a middle-class ailment. Only the other day a man of the people, as the phrase goes, a Labour leader, mark you, came to me literally pale with distress, having experienced a peculiar and delicious glow while driving with a Marchioness. He concluded that he was tainted with snobbishness, a thing he abhorred and despised ; and having marked it down in himself he now sees it sticking out not only of determined Radicals, but even of some of his colleagues. He has put himself entirely in my hands, and at the present stage of his ailment the principal mischief against which I am contending is the subtlety and persistence of his penetration. He goes about sniffing for the tainted breeze, damning and swearing with tears in his eyes, and whiffing it everywhere. When he comes here, I say to him, ' Old chap ' (he likes being called ' old chap '), ' old chap, you have missed your vocation, you're another Thackeray.' I am trying, you see, a little chaff-treatment.

"Again, at the other end of the scale, one of the saddest cases of snobbishness, taking the form of Chronic Condescension, is a young Countess, a sweet, charming creature with a heart of gold. She comes to me week after week, always with the same lamentable story : ' Oh, Mr. Ponde, it's too dreadful. I *can't* help feeling, whenever I do anything kind, even when it's a little ordinary thing, that it's quite specially kind as coming from *me*. It's too, too awful. I can't even hand a cup of tea to an author or an artist whom I admire *intensely*, without feeling somehow that he ought to respond as though it were a great favour. Dear, dear Mr. Ponde, tell me what I ought to do.'

Well, I always try to spare my patients all the pain I can, but this morning, in her case, I was driven to touch a nerve. I simply told her, 'My dear lady, they all notice it, and grin about it behind your back.' It quite broke her down, but I think it may do her good."

Mr. Ponde paused, and smiled at me : "I have talked to you chiefly about my other patients, but that is part of my method. In one sense, you are an unsatisfactory patient. I mean," he added kindly, seeing a look of consternation on my face, "from my point of view. For I am conscientiously compelled to prescribe for you that for the present you do not visit me again. On these topics you must give your mind a good rest. You have told me you are a journalist, and it will do you no harm, nor me either, to give a certain publicity to our interview, but after that let the subject drop." We parted, and I never found it so little embarrassing to give a professional man his fee. On leaving the house, owing no doubt to some miscalculation on his part, I found myself confronted with the person who had sat behind *The Times* in the waiting-room. I recognized his imposing features in a moment, having myself heard him lash Society from the pulpit. I sat under him last Sunday ; the congregation was thinner. His denunciations lacked something of their old romantic gusto. "The Ponde treatment is working," I thought ; "I really believe he is better, but he will lose his congregation."

II

In spite of Mr. Ponde's injunctions to give this subject a rest, I find, on looking through my articles, that I did return some years later to the

study of this curious and humiliating passion called snobbishness. I will end my reflections by retelling a story, a tragic story, of an arch-snob—more harrowing even than Max's perfect little study on the same subject, *Maltby and Braxton*.

An old gentleman, who had a finger in my education and occasionally expressed himself in aphorisms, bade me "Snub snobs." I have failed to carry out his injunction with the severity he would have approved; I have met too many amiable snobs. Indeed, inverted snobbery depresses me far more than the frank, eager kind; there is a childishness about the latter which is disarming. Soon after I first came to stay in London I got to know an elderly artist who worked among the poor, and took his pleasure in the grandest society, which in Victorian days was much more exclusive. He seemed to specialize in duchesses. I think I can remember seeing on one occasion as many as three, after one of his small dinner-parties, holding with rather alarmed expressions little, fizzling Japanese fireworks in front of their faces.

There were usually drawing-room fireworks at these entertainments, to which, having met him in misleading circumstances, I was sometimes invited. In the intervals of Philanthropy he used to paint weak, but excessively noble, portraits of distinguished ladies, and very rich sketches of park-vistas or of corners in their gardens. In front of his windows hung shattered fragments of a glass chandelier, and the last rays of the sun, shining through them on late summer evenings, used to scatter about the room and over his guests prismatic patches of colour. His delight in titles and great possessions, in glass prisms and Japanese fireworks, struck me as all of a piece; and I never could echo the moral contempt with which he was sometimes

mentioned by other artists and social workers. He was exceedingly kind.

Yes, the person who takes social distinctions very seriously may be a fool for doing so, but I cannot get up much indignation against that particular form of foolishness, especially when it has its roots in natural aesthetic preferences and sensibilities. It does not seem to me base to be attracted by historic names, fine houses, prestige, or the agreeable qualities which are the product of ancient riches. Though, of course, it is childish to think a glittering chandelier is the most beautiful object in the house of life, still, it is not less foolish to think that the coal-scuttle must be. What is detestable in snobbishness is the obverse side of it: the incapacity or refusal to see what is lovable or interesting in people who do not exhibit certain social characteristics. It is not the foolishly looking-up that offends me, but the foolishly looking-down; not the belief in the existence of "the right" kind of people, but the belief that there are "wrong" kinds of people.

Hasty readers of Proust have sometimes exclaimed, "Surely Proust is the most gigantic snob ever endowed with genius." I shouldn't put it like that. If they said, "Proust is the subtlest observer who made the study of Society, the study of social shades and special types, an important part of his work," they would be nearer the mark.

I admit that most of those who figure in *À la Recherche du Temps Perdu* appear as ferocious and impassioned snobs; but Proust, though he responds to every quiver of emotion in them, is himself detached. His temperament was extremely worldly, and yet he was also a born solitary. The world attracted and repelled him. It gave him exquisite gratifications, and yet gratifications of a kind which he knew would destroy the experiences

that he valued even more. It was this duality in his nature which made him such a superb chronicler of manners and social passions.

The snobbishness objected to in Proust was not only of the "looking-up" kind, but of an unusually poetic sort ; and you cannot have read far if you have not discovered that the drama of the hero's experiences in the grand world is a process of slow and absolute disillusionment. The people who seemed wonderful to him when they were inaccessible, prove on closer and closer acquaintance more and more ordinary—and sometimes even vulgar. This is part of the whole "moral" of Proust's view of life : the world, like love and everything else in it, is only enjoyed in memory and imagination.

III

Now for the pathetic story of the unfortunate arch-snob. I have condensed it from the pages of Lenôtre's enchanting book of historical research, *Histoires Étranges qui Sont Arrivées*. To make the fantastic story of poor Bouret a little more credible, I will first repeat an anecdote of the times when he lived and Louis XV was on the throne.

When the young duc de Fronsac, then at school, informed his magnificent grandfather, M. le maréchal de Richelieu, that he did not want the purse of a hundred louis which the latter had brought him, because he had economized from his last allowance, that perfect eighteenth-century model of manners for the great, immediately opened the window and flung the purse to a beggar below : "*Voilà ce que M. le duc de Fronsac te donne, pour se former aux bonnes façons !*" Then he turned indignantly on his grandson. "Economized ! What does that wretched word mean ? A young man

of your rank has no right to think of anything so sordid ! ” This anecdote is characteristic of the epoch. French society despised money with an ostentation which, if rather mad, was not without a certain grace and magnanimity. To be a millionaire in those days was to be downright despicable ; and bankers, whom lucky speculations had turned into Crœsuses, pathetically did their best to squander their fortunes at once. M. Lenôtre gives instances of the insults which were heaped upon financiers who had been successful, and the eager humility with which they promptly proceeded, in obedience to good form, to ruin themselves and win a little respect.

Bouret was the son of a valet and a lady’s maid. In 1747 there was a famine in Provence, owing to several speculators having made a corner in wheat, and Bouret, who had made a little money, broke the ring in eight days, by sending down sacks three-quarters-filled with sand with a covering of corn on the top, at the same time announcing that they were sent by the Government to stop the famine. The speculators at once released their corn and sold their stores at any price. The crisis passed, and Provence hailed Bouret as its saviour. He was nominated treasurer-general of the King’s household, and then *fermier-général* ; ten years after being a drayman, he found himself the possessor of a fortune estimated at a hundred million francs, a figure then fabulously great. He gave dinners at which the guests were presented with the carriages and horses which he had sent to bring them to the feast ; the ladies were given diamond aigrettes, and the gentlemen, on unfolding their napkins, found orders upon the numerous banks which Bouret controlled. A suggestion reached him that Louis XV would be willing to accept an advance of five or six millions. “ Ten,

twenty millions, all he would deign to accept," was Bouret's answer, "without interest if—the condition would cost the King nothing—if M. Bouret were granted the favour of presentation at Court." Alas, *that* was impossible! But the King wanted money badly, and if M. Bouret would walk in the gardens of Marly, the King, by accident, might meet him. During the next few weeks, in the hope of this encounter, M. Bouret, daily dressed in diamonds, feathers, and his finest clothes, never left the park, and at last, one day, he saw a little group of people approaching of whom only one was wearing a hat. He recognized the bearers of dazzling names to whom he had lent money, but in whose presence he felt ridiculously small; they were chatting easily to the King, who wore a hunting coat. The poor man felt faint; the blood drummed in his ears; had emotion not paralysed him he would probably have fled. Louis XV, his attention apparently fixed upon the swans in a piece of ornamental water, was approaching him. "*Monsieur Bouret! Ah, Monsieur Bouret, this gives me pleasure. . . . When I go to Fontainebleau, Monsieur Bouret, I shall stop at your country house and eat a peach. . . .*" When the financier recovered his senses, the King and his companions had passed into the distance.

So the King would stop on his way to Fontainebleau and eat a peach from the garden of a poor millionaire! What exquisite condescension! Bouret's first step was to acquire a magnificent property on the banks of the Seine. In a few days hundreds of gardeners, masons, and waggoners were at work; terraces covered with peach trees transported bodily from all parts of France were constructed in a few days; an exquisite pavilion rose like an exhalation from the ground. And when fountains, statues, lakes,

groves of peach trees, avenues of peach trees, new walls on which old peach trees were spread, pergolas over which they were trained, were all complete, the master of this Eden waited, first for days, then for weeks, then for months, perfecting or embellishing a paradise in which the King would deign to spend a few minutes. At last, he timidly contrived to remind the King of his promise. "Yes, yes," said Louis XV when the message reached him, "M. Bouret, of course. . . . Tell him I'll come for a day's hunting one of these days." When these words were repeated to the financier they threw him into dismay. There was no hunting to be had at Croix Fontaine! He bought at once a forest neighbouring the royal forest of Sénart, stocked it with herds of deer, pheasants, stags, and roebuck. He learnt to ride and to bow from horseback; he recruited a battalion of huntsmen, a band of trumpeters and several packs of hounds, and then he began again to haunt the paths of Marly park—finally not in vain. One day the King with a winning smile came up to him. "Ah! M. Bouret. . . . So faithful M. Bouret is still attending me on my little walks. I have not forgotten my promise to breakfast with you. You can count upon me!" Breakfast! So the King was coming to breakfast! Such a favour was only granted to his most intimate friends: either to those whose ancestry could be traced to remote antiquity, or to those who had performed great services to the State. And, more wonderful still, it was a certainty—the King had said "Count on me!" How little time there was to prepare! Stables would have to be built for seven or eight hundred horses, coachhouses for the carriages, since the whole Court would accompany the King. There would have to be at least forty or sixty tables; refrigerators for the champagne, huge kitchens for roasting, an army of

footmen would be required ; and then, the food ! . . . Messengers would have to be sent to England for lace napkins, to Strasbourg for *pâtés*, to Geneva for trout, to La Rochelle for oysters. How much plate would be required, too, in addition to Venetian glasses and Chinese porcelain ! Bouret felt that if necessary he must ruin himself. The insolence of his enormous fortune could only be palliated if he were prepared to squander it on the King's caprice. When everything was at last ready, he once more betook himself to Marly to fix the date on which he should give the order to put his army of cooks and scullions in action. Louis XV seemed ill and old that day. He complained of his health ; the journey to Fontainebleau tired him now, he said ; he would like to break the journey : " If it does not give you too much trouble, M. Bouret, will you put me up for a night ? "

Bouret withdrew in a very grave state of mind. He knew that wherever the King slept, he was *chez soi* ; there would be nothing for it but to leave his own house if the King deigned to pass a night under his roof. At a little distance from Croix Fontaine, Bouret built a castle for the King and his Court. He made a bridge over the Seine, and a paved avenue leading from it to this fairy palace. In the library of sandal-wood were forty huge magnificently-bound volumes, entitled *Le Vrai Bonheur*, each marked with a date ranging from 1774 to 1814. Each volume contained 365 pages, and on each page in illuminated letters were written the words, *Le Roi est venu chez Bouret*. The first volume reposed on a platinum and onyx desk ready for the King to sign on the day of his arrival. A statue of Louis XV with an inscription by Voltaire stood in the courtyard. At the last moment a humorist suggested that one thing was lacking, a hostess to receive the

King. Bouret rushed to Paris and married a wife. The morning the King was expected, Bouret and his wife, servants, and musicians were waiting in a silk tent at the bridgehead, when a courier was seen to approach, galloping at full speed, and he would have passed had not the frantic shouting of Bouret arrested him: "You are from the King? The carriages are on their way?" "The carriages? Why, the King died this morning! I am bearing the news to Fontainebleau." There was an awful silence. Bouret, whose legs had failed him, sat down. Then he lay down. Presently he began to clutch the air with both hands. He died on the carpet he had spread for a man who would never set foot upon it. Near Cesson on the banks of the Seine, there are still two *châteaux*, M. Lenôtre tells us, one called the *Pavillon Bouret*, the other the *Pavillon Royal*.

IV

We cannot wander back a hundred years in imagination without being struck by the rigid reality of social distinctions in the past; and eighteenth-century memoirs often suggest that these barriers were sometimes quite impervious to natural sympathies. We come across odd streaks of apparent callousness in sensitive people where their social inferiors are concerned. Of course only at moments; for however strong convention may be, consciousness of a common humanity is always there at the back of people's minds; sometimes, especially in earlier days, producing the queerest contrasts in behaviour. I do not suppose that the courtiers who ragged with "Old Rowley" felt it at all odd that the next moment they should be offering him a dish on their knees, and when I have peeped into the court of the Great Eliza,

the rapidity with which she was wont to pass from the grossest familiarity into hieratic aloofness has seemed startling. In the Middle Ages, when the divinity of Kings, the sacredness of the persons of Bishops and Cardinals, the venerability of Lords and Princes, were more instinctively accepted, these chops and changes must have been still more violent. What an immense surprise reverberates through old literature that the great are also human, and "come to dust"; what portentous and we may fairly say, what humourless humility, similar thoughts seem to have inspired in the great themselves! The mortal King prostrated himself before the Invisible King, and when he turned round, lo! while still remaining man he was also a golden image; the great in turn knelt before the idol, and upon them too some mystic shimmer was shed, a gleam faintly transmissible to those immediately beneath them; they, too, were splashed with a few drops of gold from the fount of honour. This hierarchic system does not exactly collapse; but generally it engages more and more constantly, except in war and danger, only men's frivolous moods—their snobbishness if you will, until it fades away into a potent system of social make-believe which intimidates without convincing. Literature, as usual, lingers behind change. Far into the eighteenth century tragedy is still the property of nobles and princes, nor are other men allowed to feel sorrows sufficiently august; their sufferings being conceived as more trivial, and fitter for the Comic Muse.

SOCIETY AND SOLITUDE, OR HIS FIRST DISCIPLE

DEAREST LADY,—I shall have the pleasure of kissing your hand on Thursday week at the very latest, if—oh ! how I hate that exceptionous particle !—if the delectable little tyrant of Dunstable does not *insist*. You know how very peremptory she can be in her favours, and how impossible it is to cope, dear creature, with her innocent oblivion of other people's feelings and arrangements. Between you and me, the Noble Lord in the Blue Ribbon is beginning to find that out—and other things besides ! Sticky moons about the gallery and terraces at Hodleston with a decidedly chastened and watchful air, so Tishy Cardoyle tells me. Well, in case, *unberufen, unberufen*, I miss my crack with you, I will write my news now, though writing is a poor substitute for pouring out to you who understand everything, and never did I stand more in need of the sympathy of a delicate, humorous penetration. How we might have laughed over my story together ! But, seriously, dear Lady of undoing smiles, there was something rather pathetic about him too. You were right : there is certainly a ray of moonshine mixed with his brains. It was waste of time and money, both scarce things with me, going all the way to Badheim to see him—at least I am tempted to think so, whenever I forget that my ludicrous adventure will amuse *you*.

Never did I rise from a posture of worship, dusting my knees, and feel more foolish. What comforted me afterwards was the remembrance of

your once saying that what you admired most of all in me was my worship of genius. Certainly, if my own "Grapes of Proserpine" does not live, I shall be at least able to reflect on my death-bed that I have paid ungrudging homage where it was due, and bestowed sympathy where it was needed. Yes, and who knows? Perhaps one or two of the lusty young heirs to fame, to whom I gave their first sweet sip at the cup of success, may some day remember and immortalize even poor little me! You see, dear friend, it is little I ask at the hands of Destiny, who has seen fit to dower others with her greatest gifts, and pass over the one who would have appreciated them perhaps most of all. I hear you protest. It is sweet of you, but on this point I will not listen to the arguments even of my dearest friends.

Talking of *les jeunes*, that reminds me of the first surprise of my visit to Badheim. You remember how positive we were from his writing, from his *saugrenu* audacities, and the sonorous aberrations of his style, that he was young—you added, broad-shouldered, with a beautiful plangent voice and an excited eye just a millimetre too wide open. Well, he is a short, grizzled, yes, almost *old* man, with a walrus moustache, spectacles, and one shoulder higher than the other. And he wears a made-up tie. My second surprise was that *Lucid Intervals*, so far from being his first book, is his sixth! He has written two others since! So you see it was not interesting, after all. We were had, dear Lady, we were had. He has been before the world nearly thirty years, and *all* his books—he admitted as much himself—have been wretched draggled-tailed failures. Once or twice he has only sold about twenty copies, and he never, or hardly ever, gets reviewed. My third surprise—but I must begin at the beginning of my story, or you

will never mount to the comic climax of my humiliation.

I believe the good little cherub who sits up aloft and looks after the life of poor Jack was wanting to warn me that night I parted from you, after we settled that we had discovered a new philosophic genius who must be written to. Never before had I found a letter of that kind so hard to write. I supposed then it was his personality which was embarrassing me; for we had divined it—hadn't we?—as decidedly *farouche*. I believe now my good angel was trying to save me! I must have torn up at least three sheets of paper, and when I did get started, of course, I wrote much more excitedly and enthusiastically than I felt—in fact, I was, I know now, quite ridiculous. No answer came for nearly a week; but at last a letter with a foreign stamp arrived. It was very long, written in a queer hieroglyphic hand, and, with our preconceived notions of the writer in my mind, it pleased me very much. I thought it rather grand. It read, too, as though behind its guarded gravity (oh, it must have taken him hours to write—it was most elaborate!) lay pent-up a longing for sympathy which suggested thrilling conversations. And when I learnt from the postscript that he was at Badheim for his heart (probably incurable), I wrote back at once still more enthusiastically, I am afraid, about his philosophizings, adding that I was longing to see him. Should I come out? I got back a letter, quite different from the first—I had written purposely myself with more intimate effusiveness the second time. My letter had drawn him with a vengeance. It was exactly like lifting up a weir-hatch; he simply poured. (I must show you the letter; there really are some striking things in it.) It was the sort of letter one might write if one had not seen a soul to speak to for weeks. It

began: "My friend." I wired back: "*Cor ad cor loquitur*, I am coming." Three weeks later I was in the train. By the by, just before my departure I received a third letter from him—most touching—suggesting I should postpone my visit since, partly from physical causes, partly from excitement at the prospect of meeting me, he had lately got only snatches of sleep and was far from his best. I started at once. You know how delightful it is to feel that one can *help*.

On arriving, I found at my hotel an excited dithyrambic little note: "O long-awaited friend!" it ran, "the feast of feasts is set"; and after continuing as though we were going to breakfast at dawn on the top of the Matterhorn, he ended—I need not say, without a glimmer of humour—by inviting me to *Mittagessen* at his pension. However, before the time came round I heard from him again: no, it was not thus, apparently, two half-blind, battered Titans, labouring in different hemispheres, should meet at last; he would expect me at four. You know how strongly I hold that men and women destroy the interest of life by not expressing what they feel, and by being ashamed of their great emotions, and how convinced I am that reserve is the death of friendship and all we mean by society, in the best sense of the term; yet I confess something in this last missive blew a little cold draught across my enthusiasm for him. It is not good manners to take for granted that anyone, before you have seen him, is like yourself, however sympathetic he may have shown himself by letter. The note pointed to a stupidity and an ignorance of the world which slightly alarmed me. I thought I would find out a little more about our Berserk philosopher before I approached his den; so immediately after luncheon I went round to his *pension*, and introduced myself to the occupants of the

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salon. The *Frau Haushälterin* was most communicative. I made her laugh by describing my trepidation, after having travelled from England to see our flaming prophet in the flesh. I do not know whether she was more astonished at my pilgrimage (you see, dearest Lady, she did not know *you*) or at my preconception of him. For it appeared that he had no belongings and hardly ever received letters, that he was a polished, quiet little man, always elaborately polite, even when suffering and in pain, and that he made himself agreeable sometimes by taking ladies of the *pension* out for botanizing expeditions. I was relieved, but even more disappointed. Everybody has heard of the labouring mountain producing the mouse, but you and I, who know the world of letters, have oftener met with the more amazing, illusion-shattering phenomenon of a mountain issuing from a *ridiculus mus*! "Is this going to prove yet another instance of it?" I thought, as I ascended the stairs. I heard him walking in his room, tapped, and opened. He stared at me in astonishment, an emotion, by the by, which his features are peculiarly adapted to express. Then he asked me stiffly to what he was indebted. . . . I was nearly an hour before my time, and I saw that he had not put two and two together. I smiled. "I am the long-awaited and, I am afraid, now over-punctual -- friend," I said, as soon as I had partly recovered from the shock of his appearance. I thought the moment before that his face had reflected the last limit of blankness of which the human countenance is capable, but at this reply it dropped to an even profounder gape of stupefaction. I moved forward, saying gently: "May I sit down?" when suddenly he pounced at me—it is the only word—and, gripping my shoulders with his hands, almost dragged me into the room. "You! I must look at you first."

You know how silly one feels when a doctor takes one's head in his hands and turns one's face to the window to look at one's throat? Think of your feelings if a stranger did it without a moment's warning! It is true he didn't hold my tongue down with a spoon and make me quack: "Ah! ah! ah!", but under the stare of his sunken eyes, which were near enough to mine to look enormous behind their spectacles, I was as helpless as a patient, and when his hands slid from my shoulders, I assure you, I felt positively *weak*. Then, without a word, he turned his back and looked out of the window, while I stood there literally unable to frame a single sentence. Presently an odd sound came from him, something like a gulp and a chuckle, and he turned to me, grinning queerly: "Take a chair. I'll ring for coffee." When we were settled he asked me why I had called him "Master" in my letters. (Had I? Heaven knows what I had written!) I said I hoped my letters explained what I felt. "Nobody has called me that before"; and then—the vanity of these cranks!—he proceeded, if you please, to put me through a sort of catechism: which of his books had I read? What had I written myself, etc., etc.? I have conveyed nothing if you cannot believe that I had entirely lost grip of the situation. It came out that I had only dipped into *Lucid Intervals*—appropriate title that!—and that I had often written before to authors I did not know. Indeed, he made me go through the list of them, and he laughed every now and then when I mentioned a name. Really, the childish jealousy of authors! Do you remember Meredith's story of the erudite professor who objected to his visitor going out for a walk with another distinguished professor, and who, after a short prelude of gloom and obscure explosions, "behaved to his faithless admirer (if we exclude

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the dagger) with the vindictive jealousy of an injured Spanish beauty"? Our friend's laughter gave him away, and to salve his wounded vanity on discovering he was not the *sole* object of my admiration, though I doubt if he valued it, I told him that he had another admirer in a charming and distinguished lady, who was most anxious he should visit her. (Don't chide me; we could have wriggled out of it somehow.) This provoked a bitter but really quite amusing harangue on "modern simony," which no longer, he said, consisted "in buying promotion in the Church, but in rich society people fancying they can purchase the Holy Ghost by dabbling in Literature and the Arts," and getting artists and philosophers to dance attendance on them. It really hit some of our friends rather hard. He then had the impertinence to ask if I was your lover, and when I snubbed him, he laughed very much. Naturally I got up to go, and he suddenly became grave. We were both standing. "I shall keep your letters by me always," he said, for a moment, I thought, rather kindly, certainly most solemnly, "and read them sometimes. When I feel lonely it will refresh me to recall" (he bowed to me with insulting formality) "my first disciple!" He watched me go down the stairs, and then I heard him blow off a great sigh and slam the door. Love to the chicks, etc. . . . etc. . . . Your devoted POPPLES.

THE PADDED MAN

SOMETIMES the critic sees himself, or rather reads himself, as others read him. He does this when he reads other critics. For instance, the other day I read a review of the *Life of Bulwer-Lytton*, which struck me as unfair to him both as a man and as an author. The critic wrote as though the most significant thing about him was that he was an "idol of Belgravian drawing-rooms," a "pet of Lady Blessington," who had no right to call any man, let alone Tennyson, "effeminate." Now if there is one fact which this grandson's biography brings out, it is that Bulwer-Lytton was a prodigious worker, a novelist who toiled at fiction with something of the furious, hurried concentration of Balzac, a reviewer as indefatigable as Jeffreys, a forcible and prompt pamphleteer, a speaker of set orations among the best of his day, at once elaborate and voluble, a satirist in verse, a producer of epic poems, a Cabinet Minister, and a man of fashion who took his recreation in shining as a wit and conversationalist. And what remains now of this prodigious activity? Little of much value, I admit, but something. Lytton cashed his cheque on fame for ready money. But the significant fact about him was that he was *not* the pampered author of society, but a writer who appealed, and aimed at appealing, to "the great heart of the people." The people were his audience, and the extraordinary thing is that, in spite of competitors, he has held that audience for eighty years. His popularity may be at last on the wane, but still in

little back-parlours, in lodgings. in wayside inns, on the shelf which serves for a library you will probably find among the latest best-sellers one of Bulwer-Lytton's ancient novels. The critic will exclaim that I am giving him all—more than he asked for ; but wait. I urge him to reflect that it needed an extraordinary dose of that power, whatever it is, which captivates and satisfies the imaginations of a million, thus to have kept his place so long.

What is this power, and what is its value ? Like myself, the writer of that review has probably paid, at the age of fourteen, his tribute of tears to *The Bondman* and *The Deemster* ; at the age of fifteen, soared perhaps into the empyrean on the wings of Marie Corelli ; and at a still tenderer age been led beneath the humble roof by the gentle hand of Mrs. Henry Wood. We have thrilled at the horror of Gagool and rejoiced in the valour of Umslopogaas ; we have—it is surely not taking too much for granted ?—bathed with immortal tenors at Trouville, and envied the splendours of Strathmore. If, now, to read *The Last Days of Pompeii* were to us a penance exactable only for the gravest excesses of literary fastidiousness, yet once we were under its spell, or the spell of books like it ; we have no right ourselves to dismiss such authors as men with no power in them.

The power which underlies a great and prolonged popular reputation in fiction, and sways the imaginations of those who, either from youthfulness or heedlessness, instinctively take books on trust, is a kind of "go." It is usually inseparable from an unfaltering good faith on the part of the author in the scenes he creates, and is a gift so precious that when it is absent it can only be made up for by most exquisite economy and artistic precision ; and even then generations will

always recur who place a Dostoievsky far above a Turgenev, a Zola above an Anatole France. The vitality which made Lytton's or Ouida's fame is akin to that which roars down the crowded thoroughfares of the *Comédie Humaine* and packs the pages of Meredith, contriving somehow to hold together for the delight of even exacting readers a world as glittering and incoherent as a smashed chandelier. It is because Arnold Bennett could also write *The Grand Babylon Hotel* that he riveted our attention when he described Mr. Povey's shop in *The Old Wives' Tale*. By itself this power makes no man an artist, but it certainly gives him a right to call any man "effeminate," if he thinks him so. Bulwer-Lytton had it to an eminent degree. What justification he had for abusing Tennyson I will not examine here. Personally, I would rather have written one phrase like "the music of the moon sleeps in the plain eggs of the nightingale" than (remuneration apart) any two of Lytton's novels. I am on that side. But I understand the impatience of the writer who sends his leaves flying daily to the press, with the craftsman in words, who spends a delicious hour wondering if "the mellow ousel fluted from the elms" is a line which could be possibly improved. There was a note of somewhat peevish and passive lamentation in some of Tennyson's poems concerned with lovers' woes which may well have irritated a man whose love was not only as a mill-stone, but as a bag of ferrets round his neck; and one whose reputation was an open raw, buzzed about by flies, might be pardoned for thinking he detected in the poet's too-nervous dread of gossip an over-pampered sensitiveness. "The padded man who wears the stays"—Tennyson's rejoinder in *Punch*—was formidable, but the phrase does certainly not sum Bulwer-Lytton up. There is a story of

his saying to a friend after that poem had appeared : " I don't know what to do about these fellows in *Punch*. Do you know what they are saying now ? They say I wear stays ! " " Well, my dear fellow," replied his friend, " what does it matter if you don't ? " " Oh, but I *do* ! " Does not that story make you like Bulwer better ?

It starts me wondering which of the two was really " the padded man," the poet or the man of the world. I do not grudge Tennyson an inch of the thick, soft, warm cocoon which devotion and admiration spun round him through life. He wrote too beautifully—how beautifully our grandchildren will understand better than we who are in reaction against him. But if ever a man enjoyed the advantages (such as they are) of quilt and screen and padding, it was Tennyson. Why, Lytton lived on the decks of the world compared with him ! " Pet of Lady Blessington," indeed ! True, he took his pleasures in society, but that is a strenuous form of recreation, demanding a light stoicism not to be despised.

I declare my heart warms to the flashy, vivid, laborious dandy burning midnight oil (and morning sunshine for the matter of that), keeping as many balls in the air at once as a juggler, including philandering and politics. A great man ? No, no, no. But do not let those stays deceive you. The first step in an English schoolboy's subsequent education is to dissociate the idea of virtue from the morning bath, the second (I forget the second), the third is perhaps to perceive that a valorous temperament is not incompatible with stays.

One who wrote of Bulwer-Lytton complained that in relation to his troublesome wife he did not behave like a gentleman. The standard applied must have been severe. I know what happened. The critic was comparing Lytton's behaviour with

that of men who would never have got in such a predicament with their wives at all. Biographers, critics and moralists are always doing that. Has a man got into debt? His behaviour in that trying circumstance is compared with the hypothetical behaviour of, say, a man like Franklin, who would never have got into debt. Does a passion make hay of a man's life? His struggles are dubbed feeble by his biographer because Cromwell would have got his impulses under. Does another write a play on a theme which Ibsen would never have chosen? He is hauled over the coals for not conducting his plot with Ibsen's consistency. If we take Bulwer-Lytton on his own line, so to speak, the story of his private life, which his grandson has told with admirable impartiality, is by no means to his discredit. *Pelham*, *My Novel*, *The Caxtons* may not often be read now; but try them, enterprising reader, try them. You will find *Pelham* quite as witty as *Vivian Grey* or *The Young Duke*, and the others far better than you expected.

VERSAILLES

THE fountains of Versailles play, I believe, during the summer on the first Sunday of every month, but only for an hour, for the expense of refilling the reservoir is considerable. The gardens are, of course, crowded on those days. The long vista from the palace terrace is then black with sauntering people, and the grand flights of steps which lead down from one stone-framed mirror of water to another are as packed as seats in a theatre. Then, at four o'clock, every gesticulating triton, nymph and river-god begins to spout at once, throwing jets this way and that, and white refreshing columns are sent up into the sky. And it is not only in that stately vista itself, which reaches far beyond the middle-distance, that these graceful forms suddenly appear, diminishing to the eye from the height of tallest poplar to the size of an aigrette; but wherever, to the right and left of it, avenues converge upon some mossy marble basin, there, too, a fountain tosses up above the trees its clustered foam and tattered crystal, and bubbling balustrades are hung with water-curtains. If you chance to visit Versailles on one of those Sundays, do not fail to explore the beeches on the left of the famous *Perspective*, and to find the less famous but most elegant *Cirque*. Built by the king for music on hot summer nights, it lies like a crown of stone in the dark wood—a crown which lacks its jewels, till, between each pair of slender pillars and beneath each light arch, a little fountain stands and glitters.

I am often entertained by commonplace

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reflections, provided they are my own ; an idea which, imparted by another, might possibly provoke from me a somewhat hasty assent, can, fortunately, beguile my solitude. Thus, watching the crowds moving about the domain of the Grand Monarch, the approximately happy families squatting on the grass, the listless processions of quiet drab people loitering along the alleys and past the statues of this royal garden, where once it had been the privilege of few to walk, I reflected upon the Triumphs of Democracy. Clearly, the value of delightful scenes and objects was enhanced by their being enjoyed by many. True, those who were now enjoying these scenes, myself included, were not themselves delightful objects ; indeed, we detracted from the beauty of what we had come to admire ; but the increase in diffused pleasure was so enormously greater than the loss, that no sane man could regret the turn the world had taken. What, after all, did I as one of a crowd chiefly miss while visiting such places ? Only the swelling joy of a special privilege which, in other days, might conceivably have been mine. And, pleased to find myself thus approving the age in which I had been born, for

Qui n'a pas l'esprit de son âge
De son âge a tout le malheur,

I was about to rest upon this commonplace, when I was conscious of a dim misgiving. A name, once a bugbear to all decent people, occurred to me—Mandeville. Why had I thought of Mandeville ? What semi-conscious train of reflection had reminded me of *The Fable of the Bees*, or rather, of his own prose commentary upon that work, so much the most important part of it ? I had thought of him once before, I remembered, when floating past the gorgeous palaces of Venice.

The theme of that reckless but ingenious thinker (you can tell from his style that his aim was to be as upsettingly clever as possible and to give pain) was that men's vices and their selfishness had been the creative factors in civilization. Judged as the comprehensive generalization it claimed to be, the theory did not stand; vice had not built the cathedrals and temples; those poems and those works of thought which attested most clearly the dignity of man and the value of life had not sprung from greedy and selfish impulses; scientific discovery had been the result of disinterested curiosity. Yet how much truth still remained in Mandeville's contention! Man was a competitive and ostentatious animal, and in every land, what, I asked myself, was, apart from its natural beauties, most worth a visit, if not its traces of the free sway of those ungenerous passions? I asked myself what made the English country-side delightful: its soft green parks, stately houses and carefully preserved, most uneconomic woods. What did we now rush about in trains and charabanes to enjoy, if not the pride of palaces and castles? What did we gaze at longest in museums? The remnants of splendour intended to abash and overawe. In every town the street or square through which it was exhilarating to walk was stamped with the spirit of exclusion. In Venice--the whole of Venice, it had been obvious at once to me, was one vast explosion of cut-throat competition in luxury and swagger; that was why Ruskin had gone about it cursing and lamenting, and inventing strange theories to excuse himself for yielding to its charm. And now, as I looked about me, I asked myself what was the scene which the crowd was enjoying before they went back to their flats and tenements, but the creation and the shell of a ruthless and selfish pride? Democracy had found the pin with which

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to kill and pick out animals which made such shells; but could it make such shells itself?

Its spokesmen, looking into the future, prophesied pinnacled cities and bright-robed populations. (I had read Mr. Wells, and sometimes been uplifted.) A million moderately rich men of to-day were richer in spare cash than Louis XIV, but had they begun to decree their stately pleasure-domes? If Democracy came to an end now—in a hundred years (it might)—what traces for which posterity would be grateful would it have left behind? I thought of the inky and ill-proportioned town halls of the north; with slight relief of the huge new building by the side of Westminster Bridge (“tax not the County Council with vain expense”); of public parks which had not merely been taken over, but created. It was a bad business. Future historians would say that, though in imagination Democracy had dreamt of splendid common efforts, the real urge behind it had been towards securing for individuals a monotonous equality in mediocre and uninspiring safety and comfort. Well, and whose fault was that? I asked the future historian with some indignation. Did I not myself ask for a little box of a house, a bath, perhaps a scrap of garden, before anything else? It was so, but that only went to show that Democracy was probably uncreative.

Then I turned for relief to considering the life that had been lived among such splendid surroundings as Versailles. How petty, monotonous and stiflingly dull it had been after all! In the *Mémoires* of Saint-Simon we have a picture of it which for vividness and exact truth is without a rival. What backbiting, boredom, squalor, baseness! It was immensely entertaining to read about; never had there been a better chance of observing human nature at close quarters, and never had an observer

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taken better advantage of such an opportunity. But what a life ! I have derived much comfort since my visit to Versailles from the *Mémoires* of Saint-Simon.

THE CHINESE IDEAL

ON hot afternoons I find the high room at the British Museum, where the Oriental pictures hang, a very pleasant place to wander about in. Its dark floor, on which footsteps make no sound, gleams like a sheet of water ; the light is tempered ; the air is cool. And there is a Chinese picture on one of its walls which I find as soothing to the spirit as the great, quiet room itself is to the senses. It is called *The Earthly Paradise*, and, while I look at it, I am not inclined to prefer fifty years of Europe to a cycle of Cathay. As often in Chinese pictures, everything in this one seems to hang enskied. The cunning disposition of the figures, of the blossoming trees (happy the country which has no perspective!), of the little boat upon the lake, in which ethereal yet courtly beings sit amicably together, seems to lift a scene of earthly beauty into the atmosphere of a soft enchantment. The gestures of this courteous company are those of boon-companions, entirely at ease with one another. But to what a delicate feast have friendship and the graces led them ! Calm and composed they sit in timeless intimacy, participating at once in the pleasures of humanity and the immunities of disembodied souls ; enjoying, it seems, with condescension, the wine, the little dishes, and the shower of blossom which an exquisite lady—or is she a goddess ?—shakes down into the water from a bough. No doubt they are conscious of the passage of the hours and the fragility of happiness, which the falling blossom recalls ; but with what inward sweet security, with

what bland acquiescent irony they remember! Surely they would laugh, if laughter, too, had not been left behind in this region, where they have been gently weaned from all mortal concerns—except the most refined of simple pleasures, and unending intimacy.

The ideal world this picture represents is typically Chinese. It is quite unlike a Christian paradise, since ecstasy and worship are absent from it. There is no circle, such as Fra Angelico portrayed, of saints embracing on their knees. This is a communion of friends. And it is still more unlike that later Christian heaven, Protestant and energetic, which cannot be painted, that heaven of “adventures brave and new,” of more splendid activities and more triumphant struggles, to which Browning looked forward. Nor is it an Oriental mystic’s heaven, nor such a paradise of pleasure as the followers of the Prophet hope for. This Paradise is more human than the Buddhist’s ideal, more spiritual than the Mohammedan’s. It is the paradise of an affectionate people, who feel that it is not through the passions, but through a kind of detachment—philosophic, religious, æsthetic?—I do not know which to call it—that men draw closest to each other. Epicurus would have understood it.

Travellers returning from China tell us tales not always to its credit; the latest news from China hardly stirs our envy. But neither travellers’ tales nor the newspapers can influence those who, through poetry and art, have learnt to delight in the subtle equipoise of the Chinese mind. That Chinese mind is a quaint marriage-flower of two opposite ways of taking the world; an Oriental indifference, to which the chances of life are of little significance, and a doctrine of conduct whose most marked characteristic is an intense apprehension

of the importance of human dignity and tradition. To understand the sentiment of Chinese art and poetry, it is a help to have some knowledge of their two great rival, theoretically incompatible, philosophies: Confucianism and Taoism.

Confucius is the prophet of social life, of the life of citizenship. He is the least mystical of sages. His religion is a religion of conduct. In the ordering of man's relations to man, in the observance of dignity and comeliness in all those relations, of a ritual of duty, lay, according to him, the secret of the best kind of life. Many wise and humane saws are attributed to him: "Do not unto others what you would they should not do unto you," "Render good for good, and unto the evil justice." (It is also recorded of him that he would not sit on a mat which was not laid perfectly straight.)

Taoism, on the other hand, which is the name for all the literature which has clustered round the doctrine of "Tao," or "The Way," is antagonistic to this teaching. Unfortunately, I cannot tell you what "Tao" is. According to the great Lao-Tsze, "Those who know do not tell; those who tell do not know." But, though you must not conclude that I am among the former because I do not tell you, the Occidental need not despair of gathering some notions about it. The utterances of Lao-Tsze himself and of his followers show that the spirit of "Tao" is one which is common to all Eastern quietism. The end of "Tao" is a state of mind which is a communion with a divine reality. "By no thoughts, by no cogitations, 'Tao' may be known. By resting in nothing, by according with nothing, 'Tao' may be approached. By following nothing, by passing nothing, 'Tao' may be attained." To the believer in "Tao" our life is really a dream. "Once upon a time, I Chuan

Tzu," wrote a famous Taoist, "dreamt I was a butterfly, fluttering hither and thither, to all intents and purposes a butterfly, and unconscious of my individuality as a man. Suddenly, I awoke, and there I lay, myself again. Now I do not know whether I was then a man dreaming I was a butterfly, or whether I am now a butterfly dreaming I am a man." To us the philosopher's perplexity is comic; to the Chinese that question, if a joke at all, is one of delicious seriousness.

Quietism turns readily in practice to the pursuit of easy pleasure. The same Chuan Tzu was once fishing in a river, when the Prince of Chu sent two high officials to ask him to take charge of the administration of the Chu State—for the Chinese have ever had a Platonic faith in the practical wisdom of philosophers. The sage went on fishing without turning his head. At last he said: "I have heard that in Chu there is a sacred tortoise which has been dead now some 3,000 years, and that the Prince keeps this tortoise carefully enclosed in a chest on the altar of his ancestral temple. Now, would the tortoise rather be dead and have its remains venerated, or alive and wagging its tail in the mud?"

"It would rather be alive," replied the two officials, "and wagging its tail in the mud."

"Begone," cried Chuan Tzu, "I, too, will wag my tail in the mud."

Thirty-four years ago, Professor Giles, from whose *History of Chinese Literature* this story comes, published an anthology of Chinese poems. In this delightful book there are many in praise of the wine-cup, of "drunkland," as the Chinese call it. They are not rollicking bumper-songs. They celebrate the release of the spirit from oppressive surroundings and painful reflections, and describe the detachment of a delicate and fantastic

intoxication. But what is most striking about these poets, even in their more Anacreontic and pleasure-hunting moods, is the restraint of their appreciation, and their capacity to find poetry in modest actualities. Life may be empty, yet the beauty of a flower may fill it: sad, but there is consolation in a memory or a thought. In Mr. Arthur Waley's *One Hundred and Seventy Chinese Poems* (his translations from Chinese poets have made many familiar with them, and influenced our own poets not a little), you will find poems which illustrate this fine economy of emotion, this gentle stoicism in grief. "If life has not a garden and an old tree I see not," says one of the Chinese sages, "whence the everyday joys of life are to come." Ah! but if only it has! After all, man's capacity for happiness is a little cup, which does not need a waterfall to brim it. The poet, so common in the West, who gathers beauty by the handful, like a child wading among bluebells in a wood, wrenching them from their roots with a kind of covetous love, and running back, arms full, at once excited and unsatisfied by the glorious too-muchness of life (is not this an emblem of the romantic spirit in literature?), cannot draw breath in the lucid atmosphere of Cathay. The Chinese have a proverb taken from their painters' art: "One touch—and it is spring"; it might have been drawn from their literature, which resembles their painting in economy of means.

Car nous voulons la nuance encore,
Pas la couleur, rien que la nuance

—Verlaine's words, which became the watchword of Mallarmé and his school, might be taken as the definition of the principle of Chinese literary tradition. Only, whereas the symbolists used that method to express ambiguous and tenuous emotions,

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the themes of Chinese poets are old, certain, and familiar. Though the dates of the poems in Professor Giles's anthology range from 550 B.C. to the eighteenth century, yet in choice of subject, in treatment, in their subtlety and simplicity, in their ingenious naïvety, they resemble each other so closely that one might suppose them the work of a single poet. The shortness of life, of youth, the frailty of pleasure, the wisdom of living in the present, the pangs of absence, the joys of retirement, the sorrow of parting, the poignancy of happiness remembered—and love, love as it is reflected in the still waters of memory—these are their ever-recurrent themes. Out of passion and its agitations they make no poems. There are no urgent addresses to mistresses or lovers, no cries of despair, of rapturous expectation, of jealousy: rather a golden patience, which, notwithstanding, has never ceased to yearn. "The poets who wrote them seem to have come to an end of experience, to have passed long ago through the wonders and tumults of existence, to have arrived at last in some mysterious haven where they could find repose among memories that were for ever living, and among discoveries that were for ever old": so Lytton Strachey wrote in an essay on this book. It is not a haven of philosophic or religious contemplation: human things are still the things which are most important. Indeed, it is the poignancy of some detail, some trivial circumstance remembered with the intensity of the homesick, which is the very means by which the poet evokes the mood.

After separation, and in memory, the poet of Cathay sees in his passions the beauty which moves him most. The wrinkles left in the sand when the waves retire are what interests him. Without a certain stillness, he would say, there can be no

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beauty ; the shadows of things are more consonant with contemplation than things themselves ; shadows which are the substance of this painted Paradise of the East.

CATS

WHEN anyone tells you he (or she) likes cats better than dogs, he (or she) confesses to more than was perhaps intended.

I once quoted a bad poem about a cat by Swinburne. No sooner had my copy gone to press than other poems about cats floated into my memory. On the whole, it was clear that so far as poetry was concerned (prose is another matter) the cat had cut a better figure in literature than the dog. There are touching poems about dogs, but they are all sentimental and celebrate a personal relationship. True, it was a story about a dog watching beside its dead master (on the side of Helvellyn) which inspired, according to Coleridge, the only perfect line of poetry Scott ever wrote :

When the wind moved his garment how
oft did'st thou start ?

But compare Matthew Arnold's poem on his dachshund, with the delightful one on his cat, of which the climax is,

Thus Tiberius might have sat,
Had Tiberius been a cat.

No doubt Matthew Arnold would if necessary have made soup of his cat to feed his dog ; but that is only another proof that true affection is not necessarily a source of inspiration.

The first poem which occurred to me was Gray's

CATS

Ode on the death of a favourite cat. (A "favourite" cat! How exactly that defines the limits of the relation possible with a member of the feline race!)

'Twas on a lofty vase's side,
Where China's gayest art had dy'd
The azure flowers, that blow ;
Demurest of the tabby kind,
The pensive Selima reclin'd,
Gazed on the lake below.

Her conscious tail her joy declar'd ;
The fair round face, the snowy beard,
The velvet of her paws,
Her coat, that with the tortoise vies,
Her ears of jet, and emerald eyes,
She saw ; and purr'd applause. . . .

It is tempting to go on writing out the whole poem, especially nowadays, when a neat felicity is the last quality held in estimation by poets, but it would not be to my purpose. Every detail is perfect : "conscious tail," "ears of jet," "emerald eyes," "round face,"—the poet is certainly keeping his eye on the object. I am not so sure, however, of "snowy beard"—perhaps because in childhood I supposed that all cats were females and all dogs males. Consequently, the faintest suggestion of masculinity in describing a cat is still to me a false note—anyhow, for good or bad reasons, I protest against "beard." Although Gray does not take the cat as seriously as other poets have done, I think his poem the best.

Pierre Loti and Anatole France have both written beautifully about cats. "Hamilcar," who is so at home in "the city of books" with her master, Sylvestre Bonnard, is a delicious animal. Her creator was right to give a cat as a companion to Sylvestre Bonnard and a dog to M. Bergeret. It is,

perhaps, a trait which more than any other helps the reader to keep those two characters apart in his mind. But the French writer who has taken cats most seriously is Baudelaire. "*Je vois ma femme en esprit*," he exclaims, gazing at his cat. Of course, Baudelaire loved cats; we might have guessed it had he never written about them. Every dandy loves them—every one who dreads or despises the slovenly, warm, homely intimacy of natural relations.

Towards the middle of the eighteenth century there lived in Paris an author who is by this time almost entirely forgotten.

M. Paradis de Moncrif composed innumerable ballets; and that Rameau wrote music for some of them was probably a matter of indifference to him compared with the opportunities they gave him of making love to the daughters of the opera. He was to be met in all worlds; he purred about the skirts of Madame du Barry when she was a *grisette*, and contributed Pastorals to the whirl of fêtes spinning for ever round the Royal melancholy, fêtes in which Madame de Pompadour figured as Ragonde, Ismène, or Almazis; he has left traces in the records of the well-known houses of debauch in the capital. He was a man of letters, a functionary, a parasite, a cynical wit, a famous fencer, an Academician, an *amant du cœur* of as many demoiselles as possible—and he adored cats. Well, there is not much left of him now, nor (let me hasten to remind myself) is there of others once as lively and now as old as he. He published a little pamphlet "*On the Necessity and on the Methods of Pleasing*," and lived adroitly with an obliviousness of principle which disarms the moralist. I cull one of his maxims: "One advantage of having a mind is that it is a means to procuring an agreeable life." He used his mind as recklessly as some

women use their bodies ; and by all means call his recklessness prostitution if it makes you less hard on them by comparison.

His *History of the Cat* is an odd little book ; I suspect it of being a kind of cryptic, indirect autobiography. I think I know why Monsieur Paradis de Moncrif adored cats : he envied them. He must have admired the way those silent, subservient, egotistic little creatures, with solemn eyes which seem to look disdainfully upon human frivolities, had established themselves in the drawing-rooms he frequented. He, too, was on the look-out for a cushion beside a fire and a lap to lie in. How, then, could he justify his own life better than by celebrating the excellence of *ses chères amies*, the cats, whose own lives also were at the mercy of caprice, and yet free to the point of intoxication in the gutter?

I notice he praises the voice of the cat. It is indeed an organ of marvellous range and expressiveness. Often, when I lie awake, I listen to it with astonishment. Hark, what a wail was that, torn from the bowels of despair ! Another, another ; and as they follow in crescendo, the rising voice seems to grow bright with anger (or is it triumph ?), till it sinks at last through sobs to a croon of gentlest pity. It is no wonder that our violins are strung with cat-gut, or that sound from them can draw the soul from us like a spider's thread ! Naturalists have, I know, an explanation of these midnight cries which I should be embarrassed to expound here. Aristotle is of the opinion that the temperament of the male cat is so lethargic that the female must attract him by violence and abuse. To this, however, I prefer a mediæval explanation that he is particularly liable to distraction, so that if suddenly a mouse were to appear he might forget the purpose of the *rendezvous* ; and therefore that

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it is from prudence and a knowledge of this weakness in him, that his consort utters cries which are certainly calculated to keep all mice far from the spot. Women ought to be grateful that in similar situations such expedients are unnecessary.

CHESS

IN Messrs. Bell's excellent Chess Library is to be found *Modern Ideas in Chess* by Richard Réti. In this book the well-known Czecho-Slovakian master traces the development of the game through a study of the methods of famous players from Morphy to Capablanca; "showing," says the wrapper, "the road along which chess has travelled—from the classicism of Anderssen, by way of the naturalism of the Steinitz school, to the individualistic ideas of the most modern masters."

Classicism, Naturalism, Individualism—it does me good to see these ancient jewels of literary jargon in this new context; used doubtless with no less, though probably with hardly more, precision. It does me good to recognize a familiar note of defiance in Maître Réti's preface: "The artists who, in spite of derision and enmities, follow their own ideas, instead of imitating nature, may in times of doubt, from which no creative man is free, know, and cherish hope therefrom, that in the narrow domain of chess these new ideas in a struggle with old ones are proving victorious." The passage calls up a picture of Bogoljubow storming along under a night sky racked with doubts about Alekhin's variation of the French game, but winning through at last to peace and confidence. Though it may be difficult for those who are not chess-critics to understand how in playing chess it is possible "to imitate nature" too closely—unless you kick over the board—the same sort of intellectual difficulty must be frequently

encountered by readers of other kinds of criticism ; when, for instance, a cornice is described as "sincere," or the colour of Lopokova's dancing as "pyramidal." Such are the regrettable subtleties of expert enthusiasm.

I am told that in the abstract world of mathematics, the methods of one man will reveal his individuality to fellow-mathematicians as clearly as a writer's style reveals him to literary men. It is the same in chess. True, you and I, reader, are unlikely, when playing over a match between, say, Lasker and Rubinstein, to detect in the moves of the former a magnificently deep vascular temperament, or in those of his adversary the refined tranquillity of an ascetic artist, diffident but of great integrity. But let us not be too much surprised if in the Q-Kt3, QR-B1, etc., etc., of Schlechter's game with John, Réti sees "a love of Nature" and "the grace and airiness of Viennese music." Upon Schlechter he grows lyrical. "His games," he says, "stand out through their breadth of scheme—just as in the forest the trunks of trees and their branches stretch themselves out on all sides wherever there are open spaces : thus did Schlechter develop his forces ; forcibly and, like nature, as it were, objectlessly. No hidden places and traps were there, but only sound development. With him was no undue haste and no pinning himself down to one idea, but one harmonious evolution. And, indeed, combinations by Schlechter are not artificially-reared roses which amaze everyone with their beauty and which, to the true nature-lover, soon savour of excess ; nay, they are rather the humble and hidden forest flowers that have to be looked for, and the love of which increases with their gathering." To the genius of Capablanca, Réti bows with grave, profound recognition—but it is a *moriturus te salutat* gesture. There is little

life in his admiration. Capablanca is not æsthetically delightful to him. The ex-champion's "technique incorporates the spirit of modern times"; it is imposing, but everything is sacrificed to efficiency. "Behind the old works of art we could always trace the artist and recognize the human countenance of their creators": γνώσις without ἀγάπη—that is the sum of his criticism of the ex-world's champion. "O for 'the joyful dance' of Schlechter," we seem to hear Réti sigh, the plodding, searching depth of Steinitz, the wild freshness of Charousek, even the extravagant iconoclasm of Breyer, who declared that "after the first move P.-K4, White's game is in the last throes."

I recently read, with some interest, in the Harleian Miscellany, a small pamphlet on the Evils of Chess, this game which I prefer before all others. I did not think that the writer of this broadsheet, which appeared in London in 1680, made out a very strong case against the game. He shares the opinion of the Reverend Mr. Baxter, "that the student that needeth chess or cards to please his mind I doubt hath a carnal empty mind." His first argument against chess is that it is a great time-waster, which does not seem to me a reason for condemning any occupation when all day long we do many worse things with time than wasting it. The broadsheet writer was evidently a natural chess-player, for he confesses that the game "hath had with me a fascinating property; I have been bewitched by it: when I have begun I have not had the power to give over." He appears to have been a clergyman. "It has followed me," he adds, "into my study, into my pulpit; when I have been praying or preaching I have in my thoughts been playing at chess; then I have had, as it were, a chess-board

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before my eyes ; then I have been thinking how I might have obtained the stratagem of my antagonist, or made such and such motions to his disadvantage ; nay, I have heard of one who was playing at chess in his thoughts as appeared by his words when he lay dying." (This last argument seems to me to cut both ways.) And when he goes on to add that it has caused him to break many solemn resolutions and vows, because he has sometimes promised to play with people and not kept his word, surely it is rather far-fetched to lay the blame upon the game ? He reports that John Huss was an enthusiastic chess-player, but "that he was greatly troubled with the using of this game a little before his death."

Chess is the best sedentary game in the world. It is a complete distraction. Why take to drink in a world full of potent but harmless alleviations ? You cannot remember your sorrows while bathing, or worry over your worries while playing chess. It has appealed to Chinamen, Persians, Indians, Icelanders (who, like the Chinese, have a chess of their own) and to Europeans of all times. Men as different as Tamerlane, Charlemagne, Haroun al-Raschid, Canute, William the Conqueror, Rousseau, Voltaire, Napoleon, Mr. Bonar Law, have all enjoyed it, and even Ferdinand and Miranda soon sat down to a game upon their enchanted island, though it was full of voices and sweet sounds.

EATING

DO you remember the description of the meals prepared for poor Mr. Polly by his wife, and Mr. Wells's comment on them? I reckon it among the soundest of his generalizations upon the life of man. It runs as follows :

“ Drink, indeed, our teachers will criticize nowadays both as regards quantity and quality, but neither Church nor State nor school will raise a warning finger between a man and his hunger and his wife's catering. So on nearly every day in his life Mr. Polly fell into a violent rage and hatred against the outer world in the afternoon, and never suspected that it was this inner world to which I am with such masterly delicacy alluding, that was thus reflecting its sinister disorder upon the things without. It is a pity that some human beings are not more transparent. If Mr. Polly, for example, had been transparent, or even passably translucent, then perhaps he might have realized, from the Laocoön struggle he would have glimpsed, that indeed he was not so much a human being as a civil war.

“ Wonderful things must have been going on inside Mr. Polly. Oh ! wonderful things. It must have been like a badly-managed industrial city during a period of depression ; agitators, acts of violence, strikes, the forces of law and order doing their best, rushings to and fro, upheavals, the *Marseillaise*, tumbrils, the rumble and the thunder of the tumbrils. . . .”

Mr. Polly is one of the best stories Mr. Wells ever wrote. I think of *Mr. Polly* from time to time, though it is years since I read about him. The above passage came into my mind through association by contraries. I had been reading Lady Jekyll's moving *Kitchen Essays*, and feeling as I read, for the first time, the kind of pleasure musical people must derive from reading a score. Her chapter on "Christmas Cheer," for instance, dispelled for me, as I read, recollections of the gloom of the festal season. After a paragraph or two about decorations, and after reminding us that we set plum puddings and mincepies on fire, not, as we suppose, to increase their wholesomeness, but to invoke the blessing of the Sun, she proceeds: "Let us, then, keep Christmas with all time-honoured usages of high festival, and again welcome the *turkey* with abundant accompaniments of bread sauce and gravy. Let an additional brown fire-proof or white metal dish follow it with ample supplies of chestnuts darkly braised with good stock, or creamed to a delicious purée with milk and butter. Then there will be room also for the midget sausages and tiny, crisp curls of bacon, for browned or new potatoes (bottled by the prudent), for grilled mushrooms and little balls of stuffing or precious truffles. These can never all be swiftly or adequately distributed from one dish."

You catch the thrill? Of course you do! But, as a literary man, let me point out, not the practical good sense of the advice, but the power of the adverbs, "swiftly or adequately." They bring before us the tension of the expectant guests.

I have never read Dumas' *Cookery Book*, but this book of Lady Jekyll's has the gusto one fancies his must possess. The merit of these *Kitchen*

Essays is not merely practical; they convince the reader that good cooking is thoroughly worth achieving. And there is another point about them. To a certain extent we are all psychologists about food—we do not offer our friends *crème brûlée* at breakfast, for example; but Lady Jekyll carries such discretions further. She has separate chapters, on a little dinner before a play, on supper after the play, on luncheons for motor excursions in winter, on food for travellers, on food for musicians, speakers and singers before their ordeals, on food for the punctual or the unpunctual, on bachelors' dinners, and on holiday hampers. In each case she shows a subtle sense of what is likely to give most pleasure. The motto of her book is a modest one from Montaigne, "Here I have but gathered a nosegay of strange flowers, and have put nothing of mine into it but the thread to bind them." I cannot criticize her recipes, but the quality of that thread I can judge of: it was woven by an enthusiast who knew what she was doing.

During the War food acquired a romantic importance. The most emaciate or most complicated sage would in France have recaptured the forgotten gusto of a smuggled dormitory feast. Other familiar things, too, acquired a profound significance; a smooth pillow and a turned-down sheet, for example, meant peace and rest unfathomable. My own war experience was comparatively mild, yet a bird of mountainous grandeur, eaten at Christmas at Ypres, stands out against the sky of memory. In dessert we were well off—we had figs, raisins, chocolates, gingerbreads; but till a ham in a tin box like a musical instrument arrived—and that bird, it seemed likely that our dinner would lack in staple dishes. How was the

turkey to be cooked? Oil lamps with a blowpipe attached were not adequate, and to drop it in the porridge-pot and boil it soft would have been desecration. Now there were nuns still left in Ypres in 1914, and it was decided that I should take the turkey round to their kitchen.

Christmas Day had begun for ambulance-men like any other: there might be a truce along the line that morning, but there had not been a truce the day before. Still, work was over by ten o'clock, and the rest of the day was spent in nailing up holly, fixing a chandelier of motor lamps, beating up and borrowing things of every description from spoons to trestle tables--and in constant visits to see how the turkey was browning. Our feast, like all good feasts, began in portentous solemnity and ended in song. The nuns came to listen to the songs and pull crackers with us; and when the Mother Superior was crowned with a paper cap they laughed, flung up their hands and clapped them down on their knees like true Flemings. It was all over by nine o'clock; but we felt we had eaten and drunk like Belshazzar.

Meredith seemed in *Richard Feverel* to poke fun at "the wise youth" for giving Lucy after her marriage a cookery-book to read; but he projected a cookery-book of his own to be written in collaboration with his wife. I do not know if it has ever been published.¹ When I was told that Mrs.

¹ When this essay was first published in the *New Statesman*, a correspondent, Mr. R. B. Beckett, I.C.S., wrote from Lahore to tell me that Meredith's *Cookery-Book*, in manuscript, was on sale with one of the London booksellers just before the War, at a moderate price. It was stated to be a work of collaboration with his first father-in-law, Thomas Love Peacock, not as I supposed of Meredith and his wife.

Conrad had such a book in preparation, I immediately thought of the august adjectives that Conrad could have contributed to it. But there are many authors whose cookery-books I would not trust. I do not want to read one by Mr. Bernard Shaw, nor I think by Mr. Hardy, nor one by Mrs. Meynell, though I am not quite sure in her case; and it would only be from intellectual curiosity that I would buy one by Ibsen.

The art of cooking is regarded in England as an inferior art, and those who proclaim their pleasure in good fare fall under the suspicion of being sensualists of the poorest kind, whose foible has no touch of poetry about it. Thackeray and Disraeli have each introduced accomplished cooks into one of their famous stories, but what a contrast in their respective attitudes towards the pretensions of professors!

Monsieur Alcide Mirobolant in *Pendennis* is a ridiculous figure, with his richly-flowing ringlets, his crimson velvet waistcoat, and his passion for Blanche Amory. "I declared myself to her," said Alcide, laying his hand on his heart, "in a manner which was as novel as I am charmed to think it was agreeable"; and he proceeds to describe the dinner he sent up one night when Miss Blanche was entertaining some of her school friends: "a little *potage à la Reine—à la Reine Blanche* I called it—as white as her own tint—

My correspondent continued: "I suppose you have noticed how often the germs of Meredith's work can be found in Peacock's, particularly the condensing of what there is to be said into dinner-table conversations, and the *succulence* of any description of comestibles: the importance of port, and the introduction of characters with a chief interest in their interiors."

and confectioned with the most fragrant cream and almonds. . . . I followed with two little *entrées* of sweet-bread and chicken; and the only brown thing which I permitted myself in the entertainment was a little roast lamb, which I laid in a meadow of spinaches, surrounded with croustillons, representing sheep, and ornamented with daisies and other savage flowers." The climax, after a dish of opal-coloured plover's eggs and a little *gâteau* of apricots, was an ice of *plombière* and cherries. "How do you think I had shaped them, Madame Frisbi? In the form of two hearts united with an arrow, on which I laid, before it entered, a bridal veil in cut-paper, surmounted by a wreath of virginal orange-flowers." This is delightful mockery. But now turn to Disraeli. There are many passages in which he takes banquets and the art of cooking with a gravity so grave as to be indistinguishable from irony. Disraeli's sympathy was always divided between common-sense and the wildest romantic pretensions--his irony springs from the conflict between these sympathies. Thackeray, on the other hand, cannot stand any nonsense. Though at first he is indulgent towards poor Mirobolant's claim to be an artist, he cannot put up with such absurdities for long, and the only way in which he can preserve his patience is by making Mirobolant a little crazy.

At the beginning of *Tancred* Disraeli introduces us to the *chef*, Mr. Leander, who has just been summoned to celebrate the coming-of-age of the Duke of Bellamont's son. It is to be a business of the Thousand-and-one-Nights, and the duke's cook is not equal to the occasion. When the story opens we see Mr. Leander making his way down one of the by-streets of Mayfair to call on "Papa Prevost," to ask his advice. The great man, who is sitting in a nightcap reading a French

newspaper, with a glass of sugared water by his side, receives him most warmly. "What do they say? That Abreu rivals you in flavour, and that Gaillard has not less invention. But who can combine goût with new combinations? it is yourself, Leander; and there is no question, though you have only twenty-five years, that you are the chef of the age." To which Leander replies, bending his head with great respect, "You are always very good to me, sir, and I will not deny, that to be famous when you are young is the fortune of the gods." Disraeli has as much sympathy with the fame of a cook as with the fame of an author or a duke.

In Paris every summer a culinary exhibition is held, and on these occasions the President of the Republic, who opens it, addresses a few words to the assembled Vatel in this vein: "France is celebrated throughout the world for her literature and her arts, and above all for her cookery. Nowhere—it is universally agreed—can one dine so well as in France. You, gentlemen, contribute therefore most potently to your country's reputation and prosperity. You are conscious of the importance of the part you play: Persevere therefore, etc., etc."

The boast that the cookery of France rules the tables of the world is no vain one. From a gastronomical point of view the language of mankind is French, and France exports accomplished cooks to all countries. There they develop their art on the lines laid down by the famous masters of their own country, Carême, Vatel, Berchoux. But there is unfortunately no doubt that the esteem which their art has enjoyed is waning. Most of those who consider carefully to-day what they shall eat, approach the question from the

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dismal angle of hygiene. They are concerned not with flavours, but with ingredients. Already one restaurant in London recommends items on its *menu* as "body-building," or "very body-building." If this is carried further we shall find ourselves masticating hygienic concoctions to the rhythm of a metronome.

TWO TRIALS

“**M**AX” once wrote a delightful essay called “*Dulcedo Judiciorum*,” in which he owned to finding the drama provided by the Law Courts superior to that provided by the theatres. At the same time, he said, he much preferred listening to civil cases :

“I cannot but follow in my heart the English law and assume (pending proof, which cannot be forthcoming) that the prisoner in the dock has a character, at any rate, as fine as my own. The war that this assumption wages in my breast against the fact that the man will, perhaps, be sentenced is too violent a war not to discommode me. Let justice be done. Or, rather, let our rough and ready, well-meant endeavours towards justice go on being made. But I won’t be there to see, thank you very much.”

I understand what he means, but I confess my curiosity is usually stronger than such qualms. I have only attended two sensational cases in my life, but if opportunity offered I should, no doubt, attend another.

The first was the trial of a woman for the murder of her child, a poor little creature about eight years old and subject to fits. The child was illegitimate, and a great burden on its mother. She was living with a man whom she hoped to marry, and he had consented to pay a few shillings a week to some home for such unwanted waifs, because no landlady would keep a child with fits. Perhaps

the woman had discovered that more money was required for this than he would be likely to give ; anyhow, she determined to spare his pocket by leaving the child with her parents, while telling him she was taking it to the home. With that end she went by train to Reading and set out to walk. It was a wet, windy day. She had twelve miles to go. Witnesses came forward who had passed her on the road, and according to them, she was sometimes carrying the child and sometimes pulling it along ; one witness reported that the child was crying. They were all going in a direction contrary to hers—perhaps if she had been able to get a lift that crime would have never been committed. She became exasperated and tired ; and when she approached her home it seems suddenly to have struck her that, after all, her plan could not work. She had already deposited another little misbegot with her parents, and about that child she had not owned up to her man. If she left both children there, sooner or later, he would find out about the first, and then—would he marry her ? So she turned back, lugging the crying child. What happened on the walk back we never learnt, but the child was afterwards found, strangled, in a wayside pool.

I did not pick out this painful case. I happened to be staying with the Sheriff, and so accompanied him to the Assizes. In Court that war of sympathies within the breast of which “Max” speaks was considerably mitigated in mine by one little incident. The accused woman betrayed no emotion during the trial until the Judge asked the witness who had found the body to show the jury how the lace collar had been wound round the child’s neck. The witness did so by putting the collar round his own. The prisoner then bent her head to hide a smile—the gentleman looked so funny !

This seemed to betoken a degree of insensibility in the criminal type which relieves one from too acute a fellow-feeling.

The only historic trial I ever attended was that of Sir Roger Casement, and the impressions it left in me are as fresh as they were that day.

To me, when I attended the High Court on the last day of this trial, the prisoner was not a symbolic figure of Ireland's wrongs, nor was the court an embodiment of England's rights. He was a man, and I—one who looked on and listened. We all of us have a characterless percipient in us, though he is rarely active; indeed, it is only in the small sleepless hours of the morning that most of us are aware of him. Come with me, at any rate, in the spirit of those small hours. I cannot take you excitedly by the arm, as some reporters might do, and point to this or that; characterless percipients have no arms, and there can be no good-fellowship between us.

Imagine, however, that we have successfully "seen," as the police call it, the policeman who keeps back the crowd, a crowd which lingers in the dark passage with the wistfulness of hungry urchins outside an eating-shop—resigned to not going in, but unable to tear themselves away—and that we have pushed together through these swing-doors.

So this is an historic trial! One day some future Carlyle or Macaulay may describe it in phrases which will make it vibrant with passion and life. How convincing his description will be, and yet how false! He will mention that the venerable ex-ambassador and historian, Lord Bryce, was there, looking down an interested spectator from the gallery; he will sketch the

career of the young Lord Chief Justice, Lord Reading, destined to be an Indian Viceroy, and who was also once a ship's boy ; and, perhaps, if he is a very learned historian, he will touch in lightly the careers of the two judges who sit on either side of the Lord Chief Justice. He will certainly paint the portrait of the Attorney-General, whose political career had been deeply implicated with Irish affairs, and who, as Lord Birkenhead, was destined to take a most important part in the creation of the Irish Free State. Yes, distinguished personages are there, careers and all ; but such accessories, out of which historians create an atmosphere, seem at the moment of precious little importance. The air of sleepy unreality which haunts the Courts of Law broods over even this trial, too. Ramparted behind desks, and raised above everybody, sit the judges in scarlet ; their dress denotes that it is impossible to speak to them as a man to men. They have ceased, in a way, to be human. They are embodiments of impersonal forces. When they speak of each other they call each other "brother," and the word excludes the rest of mankind. Do they make a joke or pay a compliment to counsel ? The remark has a peculiar savour, as though it were a kind of *lusus naturæ*. And there is the usual contrast between the leisurely matter-of-factness of the proceedings and the excruciatingly vital issue at stake.

A long man in a black gown, with wig tilted off his forehead, like a straw hat on a hot day, and an oddly undergraduate air, is talking ; talking as emphatically as his preoccupation with what he is going to say next allows. It is the Attorney-General. He is saying that it is not necessary to go into old, unpleasant controversies, for an event has happened which has altered the whole face of Irish politics : he means the war with Germany.

For a moment, my mood changes ; I cease to be a detached observer. I feel inclined to interject, " But it didn't alter them—that's the whole tragedy. And why 'old,' as though these controversies were dead and buried long ago ? " Then I slip back into being a characterless percipient. The Attorney-General goes on. His passion comes in irregular gusts, like the noise of talking through a swing-door which is constantly opening and shutting. There seems no particular reason why he should be so moved one moment or so casual the next. His moral indignation appears something he can turn on and off with a tap. These contemptuous gestures of abhorrence directed towards the prisoner—at whom he never looks—what kind of emotion do they represent ? Is the speaker's heart really aflame ? If so, how account for these sudden drops into the conciliatory casual tone of a sensible man addressing all sensible men ?

The argument is sound enough and well arranged. It is clear as a pikestaff that Sir Roger Casement has committed treason ; that he tried to land arms in Ireland, and to persuade Irish prisoners in Germany to fight against England. The verdict is a foregone conclusion. I keep wondering why the accused does not jump up and cry, " Enough of this ; I deny nothing ; sentence me to be hanged and have done." For the first time I look at him steadily and try to read him. He sits, fidgeting a little now and then, in a lassitude of composed impatience. I guess that he is suffering from an internal, churning sensation of anguish. He looks at his watch ; occasionally he yawns a little. It is not a yawn of indifference—I saw that half-yawn on the faces of men in France, just before they were going into action, or when shells were beginning to arrive. But the prisoner does not jump up ; he allows the Attorney-General to

go on telling a perfectly clear story, which, nevertheless, as a human story, is quite incomprehensible. There are no motives in it ! And he ends by telling the jury that they have a duty to perform as painful as that which is being performed by others, elsewhere, in these bloody and critical days, in the service of the Empire. Here, it strikes me that the Attorney-General is speaking as a civilian. I wonder if the Lord Chief Justice is really going to find charging the jury as painful as he would find charging the Germans at La Boisselle.

The Lord Chief Justice turns in his chair towards the jury with an almost confidential movement, which says as plainly as speech, " Now I am going to make everything clear ; you can't go wrong if you listen to my words, and they will be nearly all of one syllable." He takes out his eyeglass and looks at them, while they crane forward as though fairly hypnotized. He begins by telling them that they must not think the counsel for the defence a wicked or disloyal man for having said what he did on behalf of the prisoner ; that it is, on the contrary, the pride of the English Bar that the prisoner should be defended whatever the crime of which he may be accused ; that it was a courageous, admirable speech. He then goes on to say that he has always felt anxiety in a Court of Justice when there was any possibility of political passions being introduced : " Justice was ever in jeopardy when passion was aroused." " Yes, my lord," a voice cried out within me (perhaps an Irish voice), " that is true ; but justice of the finer sort may be also in jeopardy when the existence of political passion is ignored." He goes on explaining what is meant by " aiding and comforting the King's enemies," the clause under which the prisoner stands indicted. It covered (no one felt surprise) seducing the King's soldiers with a view

to making them fight against England, also importing arms for the use of rebellious subjects from a country with which the King of England is at war.

“Put a coronet on a man’s head, and the blood in his brain will start circulating in different fashion, flooding new channels, and changing in important respects his outward demeanour.” It is the same with a judge’s wig. I hardly recognized in the Lord Chief Justice the advocate I remembered. His clear, ringing voice had become a minatory mumble; his delivery so weighty as to be almost indistinct. He seemed to have aged thirty years. The stand-firm, prompt-pouncing manner of the advocate had changed into the ominous formality of immemorial authority. I hastily remind myself that it is unfair to charge a man with insincerity for adopting a manner, not natural perhaps to him, but appropriate to his function. Yet sometimes circumstances arise which sharpen our contempt for acting of all kinds, and then. . . . Well, it was precisely this that was to happen after the luncheon interval.

Of course, during the morning I had looked from time to time at the accused. I noticed two things about him: First, he was obviously a foreigner. He might have been, for all one could tell, with his sallow face, black beard, and that peculiar lift—did it betoken vanity or pride?—of the eye-brow, a Spanish hidalgo. I decided he was very vain. Secondly, he was a type of man whose “spiritual home,” to use a phrase then famous, was certainly not a Court of Justice. Doubtless he would have been a better man, a more reliable one, had he had something of the final matter-of-fact sense of right and wrong which reigns there. He looked the sort of man who might put devotion to a purpose or an ideal so

high that, when that emotion possessed him, nothing else, no virtues, consistencies, or loyalties, would seem to him of much consequence. There were, I knew then, grave inconsistencies in his career, and I learnt afterwards there was also a grotesquely morbid streak in his temperament. Somewhere, in some legal or political archives, his private diary is still kept, and the publication of extracts from it would effectively prevent the canonization of his memory. It would be itself a dirtier action than any private shame recorded in that diary, but it would be effective.

Looking at him, I realized how inevitable it was that, as he had accepted a knighthood from the King, he should have done so in a graceful letter. Such a man could no more be curmudgeonly than he could be raspingly rude. As for his living on a pension from a Government he was betraying, I said to myself he would regret he had done so, yet he would feel he had earned every penny of it in the past—and anyhow, loyalty to his cause came first. It was a miserable, irretrievable fact that “his honour rooted in dishonour stood,” but there was no helping it. Thus I explained him to myself. What those whom he had betrayed had a right to think of his conduct was another question. He himself would not expect mercy where he had betrayed confidence.

The jury were away about an hour. What they were hesitating about I could not conceive. When the hush of Court was disturbed by the jury's return and the curtain shook and the usher came in, we stirred uneasily. The prisoner smiled; he seemed happier now.

After the verdict the Lord Chief Justice asked him if he had anything to say. He was, of course, standing up between the warders at that moment, and he stepped to the rail with a manuscript in his

hand : " My Lords, as I wish my words to reach a much wider audience than this, I intend to read all I propose to say." The new voice was very agreeable—a little uncertain and agitated ; and the papers shook in his hand. It was the first perfectly natural voice we had heard in Court all day, and at the sound of it something very strange occurred : the dream-like formalism of the proceedings vanished ; the tension relaxed ; his judges turned to look at him for the first time, and with a kind of friendly curiosity, leaning on their elbows to listen.

What a different point of view, what a fantastically different point of view, was presented to us ! " If true religion rests on love, it is equally true that loyalty rests on love. . . . Loyalty is a sentiment, not a law. It rests on love, not restraint. The Government of Ireland by England rests on restraint and not on law ; and since it demands no love it can evoke no loyalty." Good heavens ! either this was the most arrant rubbish, or Sir Frederick Smith and Lord Reading had left out a great deal. I felt that at bottom it was my view, too, but the difference between me and the rebel in the dock was that I loved England, and I could never have wished him success at the cost of England's downfall. Yet I could understand him. For, if instead of being a hyphenated Irishman, owing everything that makes life worth living to Englishmen and to living in England, I had been brought up in Ireland, could I have helped putting Ireland first ? Would the legal aspect of my position as a subject of King George have seemed the absolutely final word on what my attitude ought to be during the War ? I do not think so. But presently I was wondering far more at the strange world of romantic legality into which the condemned man seemed to be drifting. He was

reading to us about Edward III, and the claim of the English Crown upon French subjects ! It seemed fantastic, till I grasped that, to him, it was an obvious fact that England had no more claim over Ireland than she had over modern France. The Press afterwards commented on his impenitent and smiling departure from the Court. But, if this was what he believed, what reason had he for repentance ? To me the relations of these two countries did not seem so simple that they could be summed up by saying that they had nothing to do with each other ; but what I felt was that England had so ruled Ireland that she had forfeited her right to expect loyalty as a matter of course from all Irishmen.

He finished his speech ; and as if by magic (one had not noticed the attendants behind the chairs) three black squares of cloth appeared on the wigs of the judges. The Lord Chief Justice read out the death-sentence in low, even tones, while the other two kept their eyes upon their papers.

The memory which will stay with me is that of a sincerity in the prisoner at once more human and more idealistic than the sincerity of the men who were sitting in judgment upon him, and of its strange effect on the proceedings. At its touch, the trial, even the solemnity of the death-sentence, seemed to lose their significance—their power, at least, to brand as well as to kill.

THE WONDER ZOO

IT was Saturday afternoon. Each train disgorged two or three hundred people, and a number of children of different ages and sizes. I, too, passed into the entrance lobby of Olympia. The turnstiles were worked by large men in tall, white coaching-hats and drab ulsters. The next moment I was in *The Wonder Zoo*. The first impression is a complex one. You walk up a slight incline and find yourself in a place which reminds you of a vast railway station, a huge terminus which has been touched by the wand of a somewhat theatrical Bacchus. Extravagant pale green vines have covered the glass roof, shutting out the light of day, and the familiar, glaring electric balls, which depend from it, are half shrouded in clustering creepers. Fix your eyes on the tobacco or sweets kiosk at your elbow, and you might still believe yourself at Paddington or Charing Cross ; but raise them, and you are astonished to find yourself at the foot of a towering cliff, on the stony ledges of which are huddled in squalid sociability dozens of brown pink-behinded apes. A little to the left, on a less precipitous slope, lies an Abyssinian bear, frowning majestically and trying to doze. A flight of steps leads you to a kind of platform grooved in the rock, and then you perceive that a deep trench, some twenty-five or thirty feet wide, separates you from these animals. This is the best spot for getting a general view of your surroundings. Below lies a rocky landscape with flat-bottomed hollows in it, and here and there a pool of water. One of them is full

of birds. In it all sorts of cranes are preening their feathers and stretching their necks, and beside it ostriches are launching themselves about with that jaunty, springy gait, at once so elegant and so ridiculous. There are geese and pelicans, too, round the water-hole, and a lovely zebra, looking as smart as a new carriage in a coach-builder's window, and a number of meek-eyed, brittle-legged antelopes. To the left again there is a dark pool, with two pairs of eyes and nostrils just apparent above its surface. The young hippopotami are enjoying that euthanasia which is the aim of their existence. True, they have never known the joys of mud-wallowing or of reaping sheaves of succulent reeds by the mouthful; still, they are free from one of the principal worries of hippopotamic existence, being washed down river in their sleep. On the whole, next to the crocodile, of all captive animals I am inclined to commiserate them least. Yet they are particularly difficult to keep in captivity, which suggests, as is the case with some poets, that a somewhat stolid appearance betrays an inward deep capacity for sentiment. Not far off is a two-horned rhinoceros or rhinaster, a native of East Africa. He lives in a depression in the rocks with a sandy floor. He has a choleric and saurian eye. The skin of this animal does not fall in heavy folds like that of the Asiatic species; of it no poet could write, "Rhinoceros, your hide is all undone." Naturalists describe it as a "truly fearful opponent," though all are agreed that it is not so formidable as the keitloa, which is bigger, and, size apart, can easily be distinguished from it by the shape of its second horn. This is equal in length to the first, while the rhinaster's second horn is short and conical. It is an animal difficult to please. The Asiatic rhinoceros can be placated (so they say) by anyone who has the nerve to lift up one of the heavy flaps

of hide and remove the parasites collected there ; but I do not see how one is to please the smooth African rhinoceros.

In another of these depressions in the rock lives what is called a " happy family " ; that is to say, a number of animals which would naturally fly at each other's throats, if they did not share bed and board. In this case " the happy family " consists of young bears, Eskimo dogs, young hyenas, young lions, and a young Himalayan bear. I do not care for " happy families " myself. In them, as in human homes where deep incongruities of temperament exist, the individuals by living together seem to lose in spirit what they gain in wariness. Think what your own feelings would be if you were born with the traditions of a young lion, and had to put up with a beastly hyena snuffling round you all day ! Of course they get used to it, but I do not believe in total eradication of racial prejudices, however difficult they may be to justify in the court of reason ; and Pliny says that the lion hates the hyena so intensely that " if both their skins be hanged together, the hair of the lion's skin shall fall away." Lastly, immediately in front of you as you stand on the platform, rises an immense round object, like the socket of a gigantic night-light. This is one end of the arena. The spectators are hidden, but out of it issue shouts of laughter and sudden crepitations of applause. There was not a seat to be got last Saturday, not even for ten shillings. Looking through the various passages leading into the arena, I could see for a second a racy individual twinkle by in a light buggy, or a deft and spangled lady poised on a bare-backed steed. I felt like one of those little louts who lie on their bellies at travelling shows and peep under the tents—" Hi ! Bill, here ; I can see the 'oofs of the 'orses." No, not quite like one of them, for

I do not care for performing animals. To see an elephant make a fool of himself does not amuse me in the least, and I had much rather watch seals catching fish than catching balls. I saw the seals in their tank between their performances. There was a constant flow of water in and out of it, and the liveliness of the slippery creatures was more delightful to me than any of their acquired antics could possibly have been. The seal is one of the most intelligent and affectionate animals, and it is very painful to think of what goes on at the seal fisheries every year. It has, as my first natural history book taught me, "a disposition to become familiar"; and my next instructor, the Rev. Wood, added that seals taken young "have been strongly domesticated with their captors, considering themselves to belong of right to the household, and taking their share of the fireside with the other members of the family." Dear old Wood! If modern naturalists write with more knowledge and terseness than you, none tell us so many things we should like to believe about animals. I cannot now quite believe in a seal on anybody's hearth-rug, gazing with melting eyes upon the glowing coals, though at one time, had I been fortunate enough to possess one, I should no doubt have tried to domesticate it "strongly."

Near the tank was a row of young Indian elephants, each tethered by one hind and one fore-leg and standing shoulder to shoulder. They were presumably performers, waiting for their "turn." They were shuffling and swaying up and down uneasily, and in spite of the notice PLEASE DON'T FEED US above their heads, they kept lifting their trunks and showing the inside of their moist, pink mouths. Many of them were so young that the sparse black hair on their weighty foreheads was not yet rubbed off. It is extraordinary how this

thin-set growth adds to the majestic thoughtfulness of their appearance. No man was ever as wise as a young elephant looks. The story of elephantine sagacity which pleases me most is that of the painter, who wished to paint an elephant with its trunk erect and its mouth open, and therefore engaged a man to throw fruit to it during the sitting. The supply of fruit running rather low, the man began to feign, instead of throwing an apple every time. After a series of disappointments, the elephant turned to the artist, and directing his trunk at the canvas, obliterated it completely with one wet blast.

At the other end of the arena are two cages : one large semicircular one with a tank, containing "Tilli Bébé's" polar bears ; the other, a long narrow travelling cage, containing Mr. Richard Sawade's ten Bengal tigers. The bears were trained for Captain Amundsen as draught animals for Arctic exploration, but it was decided that they would want too much watching when off work. Besides, however docile at their job they may appear in the arena, once they got upon their native snows and felt the fierce delicious cold, I am sure they would prove a difficult team to drive. Although the cage is small for twenty bears, they appear to be in prime condition. I do not think I have seen such fine specimens anywhere before. I watched them for a long time ; some, after the manner of their race, swinging doggedly back and forth, as though doing some exercise prescribed by an ursine Sandow ; others rolling each other over like great snowballs, or standing on their hind legs and playfully cuffing each other with their paws.

The tigers are young, but they are very large for their age, and remarkably sleek. It must be remembered that in the case of lions, bears, or tigers which, like these tigers, have been

practically reared in a Zoo (the oldest of them is only sixteen months old, and they have all been exhibited and trained for eight months) their natural ferocity is much less, and consequently the process of cowing them much less drastic. They may even require a flick of the whip to kindle that sudden flare of temper which the public expect, if they are to believe in the danger to the tamer his exhibition nevertheless always entails. I watched Mr. Sawade get his tigers out of their cage. Most of them went like lambs; only one glared and snarled when he touched the bars of the cage with his whip, and then drew off with a sullen slink of lovely treachery, licking its stiff whiskers as though it longed to fasten its jaws on him. They are superb beasts. The beauty of the tiger is so impressive that I wonder anybody wants to see it play tricks, but on the other hand so terrifying that I am not surprised people like to see man dominating it. The tiger is at one moment the very incarnation of the beauty of anger, and yet "how politic his grace in moods morose!" How thrilling to see him sharply shorten his body for a spring! He took his name from his swiftness, for the Parsees call an arrow "Tigris." And then "the royal cruelty of that face!"

It is not the tamer but the big-game sportsman the lover of animals loathes. Though tricks may bore him and even depress him, though the sight of caged animals makes him sorry: yet without the one he would miss opportunities of seeing many of their movements, and if there were no Zoos he would probably not see the animals at all. When we alarm ourselves with the idea that training implies punishment, it is reassuring to remember that most of the men who train animals have a passion for them, and to recall that teaching one's own cat or dog has implied keeping their confidence

and winning their affection. Personally, I wish all tricks were given up, but it is not the showman but the sportsman who rouses my wrath. I hate him as some hate those who destroy old buildings, with his "bags," explosive bullets, and tree platforms, well stocked with powder and refreshments. Look at him as he is photographed in his sun helmet, his sandwich-box slung round him, posing for us in the public prints as an Horatius Cocles, arms crossed, his foot upon the neck of one of a row of glorious beasts, each possessing a hundred times more beauty every hour of the day than he could create in a life-time. Who can walk up the stairs of one of our big clubs, past the hundreds of horns of lovely and harmless creatures, now being exterminated in every quarter of the earth merely to give young men healthy exercise and distraction, without whispering a wish to the propitious heavens that every married man among them may be horned himself before he dies?

The Hagenbecks have a good tradition. Their father, Carl Hagenbeck, introduced the system of substituting for cages plots of variegated ground in Zoos. At Olympia many of the animals are necessarily kept in their travelling quarters, which are, of course, narrow; but they have every appearance of being admirably tended, and the only smell which reaches the nostril (even the vulture's cage is odourless) is a human one. It is, of course, a trying experience for a wild animal, a show like this; the glaring electric light, the shindy and ceaseless shuffling of feet. Many of them struck me as looking like passengers in a night train, woken up to show their tickets. But let the tender reader comfort himself or herself—the nerves of the Bactrian camel or the dwarf hippo are probably firmer than either his or even hers.

THE DUKE OF YORK

THE Duke of York's Steps is the finest site in London for a statue. It struck me particularly the other day, for I had heard a rumour that a proposal was on foot to remove that royal personage from his exalted position and replace him by the effigy of a worthier man. Few people know how he came to be perched there. The best account of his character and career is to be found in that delightful book of historical gossip, *Glimpses of the Twenties*, by Mr. William Toynbee. Mr. William Toynbee is one of the few English writers who handle historical subjects of the personal kind with the wit and neatness of French memoir-writers. He writes from a full mind, and he knows the beginning of the nineteenth century as well as Mr. Austin Dobson knew parts of the eighteenth century. I cannot think why his two books, the one I have just mentioned and *Vignettes of the Regency*, are not better known; they are delightful reading.

The Duke of York was George III's favourite son. He came next in age to the Regent, and he was called "the Hope of the Family," not on account of his brains—of these he had a scanty share—but because, one of a bad bunch of brothers, he was the most amiable, courageous and genial. His life was spent in raking, drinking, gambling, and sinking ever more deeply into debt, but "Tommy Atkins" liked him. There was a kind of boisterous bonhomie about him for which the English have a weakness. He got into some ex-

traordinarily disreputable scrapes, for all his life he was at the mercy of venal adventuresses; but he behaved once very well in a duel, and he was always excessively good-natured. On two occasions he was entrusted with the command of the British Army in the field; an appointment which resulted in the gravest discredit, if not disgrace, to our troops. He was an inveterate toper, and about the worst strategist whose name has been handed down in history. After the disaster of the Helder expedition he was retired to the Horse Guards, where he did fairly well, thanks chiefly to his personal popularity, which was based on a reputation for never refusing an interview to a private soldier. There he remained until "his career was temporarily checked," says Mr. William Toynbee, "by an unfortunate attempt to reconcile the worship of Mars with that of Venus, the representative of the latter divinity being the inconstant spouse of a bankrupt stonemason named Clarke, whom the Duke 'protected' in a sumptuous establishment in Gloucester Place." Mrs. Clarke was fond of having everything handsome about her; and to the Duke extremely good and large dinners were as essential as cigarettes are to most journalists; moreover making presents (on long credit) of costly diamonds had become second nature to him. But as a "protector" he had one great drawback: not only had he seldom any ready-money, but even when he had he was not willing to part with it. Mrs. Clarke took the situation into her own hands. The house in Gloucester Place became the business resort of officers in quest of promotion and of clergymen with a desire for preferment. She drove a very brisk trade, sometimes touching four figures at a bargain. Then the Duke quarrelled with her over an accommodation bill, and left her with but £400 a year.

She promptly threatened to publish her "Recollections," "embellished with over fifty effusions from his impulsive pen." Publication was for a time averted by promises, but the promises failing to mature, Mrs. Clarke took the step of coaching a Whig M.P., and a public inquiry was instituted. Though the Duke was exonerated from actual participation in the proceeds of her traffic, "it is difficult to resist the conclusion that he was cognisant of it, indeed, welcomed her corrupt transactions as contributing to raise the supplies which he failed to provide." So he wisely resigned, and a year or two afterwards he was reinstated as Commander-in-Chief by his affectionate brother, George IV.

This is a human, all-too-human story; but how on earth did he get to the top of that column, next to Nelson's the most towering monument in England?

The story is one which might teach the most ambitious the vanity of fame; for if not only fame, but popular adulation, is so easily won, what is it but an empty breath? One morning in 1825 he awoke to find himself famous. I do not suppose the night he went down to the House of Lords, purple with indignation and with wine, he had the smallest notion that a confused philippic would cause him to be hailed as the saviour of the Church, let alone exalt him in the eyes of all men high above the chimney-pots for at least a hundred years. The Lords had shown signs of weakening on the subject of Catholic Emancipation, and in a hobble-gobble fury down rushed the Royal Duke. The combed and depleted record of his speech, afterwards printed in gold, probably ill reflects its spontaneous character. It ended with the words, "So help me God"; and the next day he "was acclaimed as the heaven-anointed champion of

religion. Bishops fawned upon him ; anti-Catholic associations canonized him. He could not have awakened greater enthusiasm if he had been a reincarnated John the Baptist."

Fortunately he lived but two years more. Dropsy saved the situation. Although New-market and cards would probably, it is true, have kept him from doing the utmost harm, still, with such a figure-head for the Church and State party, it is not impossible that the row over Catholic Emancipation might have developed into something like civil war. Well, Catholics have votes and the Duke of York has his statue.

What do you think of that, my cat ? What do you think of that, my dog ? Shall we pull him off his pedestal, or shall we leave his pillar as a monument to human folly ?

Statues which have become invisible to the public owing to their complete indifference to the person commemorated, or are disgusting to taste, would be better removed. They only cheapen glory. But I would have it done tenderly, and with regard to the pathos of the occasion. Let us fake an appropriate ancient ceremonial. As I imagine it, the ceremony of veiling statues would be accompanied by music. The choir would be divided antiphonally ; one section asking the question anthem-fashion, *Usque adeone mori miserum est ?* (Is it then so hard a thing to die ?) and the other replying for the subject of the statue, *Liberavi animum meum* (I have delivered my soul) ; thus confessing through their voices that whatever he did for mankind had ceased at last to be operative, and that there was therefore no excuse for his bodily presence in the streets of the living, since his stone ghost could no longer remind them of anything. Then an official (His Majesty's Reputation Remover) would step forward and make a short

valedictory speech from the plinth, and the Cap of Oblivion would slowly descend. For this extinguisher I can think of no better inscription than the words *Mortuo Morituri*. What could be more appropriate, at the moment of consigning a fellow-mortal to oblivion, than to admit it was our destiny also? Lastly, to the cheerful strains of a good march we, the respectful crowd, would disperse and go our ways. If in the course of the next thirty days no British subject over fifteen years of age should observe and report that the statue or monument had been "veiled," the Authorities would be entitled to remove it.

CROWD PSYCHOLOGY

THE *Psychology of Crowds*, by Gustave Le Bon : It is years since I read it, but as clear as though I had written the words in the margin yesterday, the verdict stands in my memory : a good subject, a second-rate book. M. Gustave Le Bon is a slap-dash writer. Here was a subject worthy of subtlety, and M. Le Bon told us little beyond what we all knew, that assertion convinces a crowd better than argument, that a crowd regarded as an entity is a simple emotional creature with poor brains, that the feelings of its components get rubbed down to a common emotional denominator. M. Le Bon is a sort of usher or major-domo to the Courts of Science ; he is willing to show round large parties for (so to speak) a very low intellectual fee. It is a useful function, and if he did not seem to asseverate continually that we are being shown everything, when clearly we are not, I should feel nothing but gratitude to him. If anyone wishes to learn more about group-consciousness, and see the curious way the study of it links on to that of the religious consciousness, he had better read the works of M. Durkheim.

During the War Mr. Trotter published a very interesting book on *The Herd Instinct*, which was scientific enough until near the end, when his own herd-instinct ran away with him, and made him try to prove that that of a race called "Germans" was intrinsically different from others. I remember at the beginning of the War getting a pungent whiff of the herd-instinct while sitting at dinner

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next an eminent man of science. "I can assure you," he said, "that if a man of science refers to a German book in a footnote, it is sheer vanity. He does it to show he knows the language; the Germans have contributed nothing"; for a minute or two I could not meet his eye again for shame. Good gracious, I thought, would he kick a stray dachshund if he met one on his way home? Dachshunds were kicked in London and bulldogs (no doubt) in Berlin. This would not be so very depressing if one were not sure that it will be completely forgotten when, in the next war . . .

* * * *

Last Monday ¹ I was in the crowd in Parliament Square; it was this experience which reminded me of books about crowds and crowd emotions. I did not go for copy, nor did I at the time observe my feelings, which are best observed, not as they rush in, but, as I have said before, in the wrinkles they afterwards leave in the sand. I went to welcome back a statesman who for some years had been shamefully mishandled in the Press. The whole length of Whitehall was braided with people; a crowd swirled and eddied round the wide open gates of Palace Yard. Immediately in front of me stood the bareheaded statue of Palmerston with his coat over his arm; a little further off, bronze Disraeli, with his ironically courteous stoop, was waiting patiently for his annual tribute of primroses. Hitherto the figure of Palmerston had always reminded me of a man at a cloak-room barrier, who, having received his coat from the attendant, still holds out his hand for his hat; but the moment the distant cheering rose to a solid roar, and Mr. Asquith's battered war-chariot (why

¹ March 1, 1920.

not simplify progression on these occasions by reviving Boadicea's device of scythes on the axles ?) turned at last into the yard of the House of Commons, Palmerston seemed to express by his gesture—one hand outstretched, palm upwards)—as distinctly as if he had shouted it, the words, "There ! I told you so !" He was a good judge of popular feeling, and what was I at that moment but a thermometer under the tongue of the public ? I felt glad, uncommonly glad. No Prime Minister or Ex-Premier for many years had had such a reception in the streets of London.

Few, perhaps, have seen the medal designed and struck by Captain Freddie Guest and Sir William Sutherland which was presented to the successful coupon-candidates in the Mad Election. "It is put safely away among my more cherished possessions," is the sort of evasive reply one receives from coupon-candidates on asking to look at it. I have been more fortunate, for strolling into the dressing-room of an M.P. while he was changing for dinner, I happened to notice a bright object lying in a small whatnot box containing a few odd links, toothpicks, black pins, old watch keys, and dusty tabloids. "A man has so few receptacles," he said apologetically when I fished it out, for it was the medal in question. It is a gilt disc about the size of a sovereign, perhaps a little larger ; on one side is engraved a gallows with the Kaiser dangling from it, on the other, a map of Germany with the words *Ex victis fiat pecunia*. Their Latinity is perhaps open to criticism ; but the meaning conveyed is clear. Above it hangs a star with fourteen points, and below a rather prettily designed Welsh harp or liar. There was a small ring attached to the edge so that the object

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could be worn on the watch chain ; but few members of the Coalition had, I was given to understand, taken advantage of this convenience.

Of all sounds reputed sad, none equals the sound of far-off cheering.

Dieu ! que le son du cor est triste au fond des bois ! To the sense of that famous line perhaps nothing in you responds ; perhaps because it recalls first to most Englishmen a huntsman's horn, while the poet was thinking of the death of Roland, when he tried, too late, to call back Charlemagne to Roncesvaux. The sound of small waves collapsing one after the other on a beach, when it is growing dark, has seemed to most poets a sad one. And so it is ; like all sounds which measure gravely the passage of time. But to my mind it does not equal in melancholy the sound of distant, intermittent cheers, a sound which, though excited and exciting, carries to one who sits alone a sense of the transitoriness of emotion. Those who are used to being cheered, and whose appearance is the signal for a demonstration, become very sensitive to shades of quality in cheers, independent of the volume of the sound. The ears of Royalty are quick to distinguish them, and, I imagine, the quality of their "receptions" on various occasions is a frequent subject of their discussions. What a curious, vague, histrionic emotion it is, which seizes the person on the kerbstone when at last the procession appears ! It is a moment of complete self-forgetfulness, in which there may or may not be enthusiasm. I believe it is a desire for this momentary euthanasia which keeps people waiting so long and so patiently in the streets, a longing to lose themselves for

a second in a thousandfold exhalation of vague emotion.

The art of receiving cheers is a difficult one, and is by no means common. The flustered bow which implies "You are really, really too kind," is better, say, than Sir Thomas Beecham's bow at the close of a performance, which is distinctly distrustful, as much as to say, "Oh, this enthusiasm is all very well, but why then don't you come to the Opera more often?" and far better than Parnell's: "The sooner this damned noise stops the better." But the perfect enthusiastic-reception manner is a compound of gratitude, and collected sympathetic attention. The public man should throw quick glances about him, responding as though to individuals in the crowd; for a crowd is a composite animal, and each member of it will feel (though no such thing has happened) as if his own eye had been caught.

KALOPROSŌPY

IT is easy to scrape odd acquaintances in London, about the parks or in the streets. But, of course, you must be properly dressed for that pursuit, as indeed for any other. There must be nothing about your get-up which entitles you to particular respect, certainly nothing that extorts deference, for that puts your relations to others all wrong from the very start. You must indeed be dressed badly enough to be embarrassed if you encounter your tailor, or an old prosperous friend whom you have not met for years ; for the personal appearance most favourable to easy talk with strangers is a cheerful shabbiness. Cheerfulness must peep through the shabbiness, since people do not fall into ready talk with glum, embittered, down-in-the-world strangers, especially if they have good reason to know those moods themselves. They do not expect any extraordinary sympathy from a casual acquaintance, nor any help from him if he does not look prosperous ; but those who lead lonely, haphazard lives (unlike people who live in society) are quite ready to believe a little pleasant intercourse is possible with a casual stranger, and the stranger who encourages that belief is one who wears an air of not having made a very good thing of life himself, but yet remains content.

One summer evening, during a long sunset, I was sitting on a bench in the Marble Arch quarter of Hyde Park, just out of earshot of the orators. I had gone the round of the platforms, and was now feeling glad to be out of the babel—glad to be

away from the secularist whose speech had broken down into a dialogue (the conduct of the Creator was under discussion), and who kept on repeating with calm annoyance, "That's not my question. I ask you, is it behaving like a *gentleman*?"—away from the frantic, hunted-looking young man who, his moist pale face working in the twilight, kept declaring, with the emphasis of despair, that he was the happiest man in the world since his salvation; away from the woman who was grappling with the decline of the birth-rate in Australia; away even from a large, shiny, radiant negro, who, having just read a text-book on astronomy, had rushed out to explain the heavens to the world, shouting to us, "and de earth goes round and round de sun, and de moon goes round and round de earth," whirling an arm in an ecstasy of explanatory enthusiasm. He certainly had (as the phrase goes) something to say, but I was glad I had got away from him too. The Park is the University of the People; but it is a University in such a hubble-bubble ferment of conviction and curiosity that those brought up at one of the quieter seats of learning cannot attend it long without feeling worried and alarmed.

In front of the platforms, and some distance from them, I had noticed several times an elderly man in a cloak and a soft hat with a high crown, standing almost stock still. He had a soft bushy beard and a noble hooked nose. Every now and then someone on his way to sample another speaker would linger as he passed him, as though expecting to be addressed. Indeed, in the old man's passivity there was something arresting, something that at first incited approach, and then repelled it. I had not sat long on the bench, when I observed him coming down the path. He looked so aloof, I did not like to speak to him, but as he was about to pass, I moved significantly to one end of the bench :

it was a suggestion he could accept or ignore with perfect politeness. He stopped without looking at me, and sat down. We remained silent.

It is a mistake to start immediately talking hard to anybody you do not know. People with "social gifts" invariably do it, but it is a mistake all the same. You have a better chance of getting to know each other if you get used to silence together first, and after an odd, long pause you are not nearly so likely to fall into futile, mechanical converse. "It is a fine evening," I said at last, "but I think we shall have some rain." This was not a penetrative conversational opening, you will think, but remember we had been sitting quite five minutes together, thinking not about each other, but of anything under the sun. We had learnt in that short time that our companionship was compatible with the internal freedom of each, and after that the fear of embarrassing and being embarrassed is much soothed. The weather did very well as a topic, and while we were still speaking about it, I was wondering of whom he reminded me. His large white hand caressed a beard as soft and grey as woodland smoke; his dark eyes, which seemed both opaque and bright, were fixed beyond the round tops of the elms. Those eager features, grand, yet delicate as porcelain—where had I seen them, or when had I imagined them before? Suddenly I remembered. There is no evidence for the transmigration of the soul, but of the reappearance of the *body* Samuel Butler furnished startling instances. I myself have dined at the same restaurant table with Henri IV, and my family doctor is no less a person than John Bright. And does not London already contain statues and busts of Joseph Chamberlain from which the name of William Pitt need only be deleted? Here upon the bench with me sat—Leonardo da Vinci. Yes,

somewhat shrunken, dusty, harassed, it was surely no other than the great Archimage of Florence. I knew his restless, distinguished face—brooding, eager, worn by the attrition of thought.

"If this world were as it ought to be, it's a delightful place you'd be living in," I exclaimed.

"Ah, well," said he, and his eyes turned towards heaven's emblazonries in the west, "p'r'aps you'd like to know what I am." I nodded, expecting anything.

"I'm a professor," he said.

I must confess I was disappointed. I had expected a stranger claim, a preposterously romantic revelation.

"My science, or rather the art which I profess," he continued, in a sweet discouraged tone, "is one men stand in need of, but do not know they need. Possibly you have not heard of it. It is called Kaloprosōpy. It is a lost art. *καλός* is a Greek word meaning beautiful, *πρόσωπον* was their word for the person, a man's person. By kaloprosōpy, I mean the art not merely of embellishing the body, of graceful movements, but of expressing and bringing into relief the individual nature through gesture and demeanour."

"I should like to read your book—or books," said I.

"I talk, I do not write," he replied. "I am well known about here." He added, "They call me Old Soapy."

Feeling I should do him wrong, "being so majestic," if I condoled with him, or even expressed disapproval of his mockers, I made no comment.

"You seem interested," he continued after a pause. "Politeness is, I need not say, a branch of this science, and it is the easiest one to master. For politeness is simply the charity applicable to

persons whom we cannot help at the moment, either in body or soul. We must do what we can, and circumstances seldom allow us to be more than polite. The rest is more difficult to learn."

He stopped, and I asked him when in history men had most cultivated the art of kaloprosōpy.

"Never less than now. Yet never was there greater opportunity. The man of leisure should consider himself as an actor impersonating his own character. We cannot all be creative artists, we cannot make ; but what material, what marvellous material, has not each one in himself ! The living person has an advantage over the most beautiful statue in the world : he is capable of an indefinite series of movements, and a series of poses, gestures, charming, expressive . . ."

Here I could not help interrupting. "But many of us are not the right shape."

"Then," he continued, ignoring my interruption, "the beauty of the eye ! Art can never translate it, for it is made of changing dreams, of vision, of desire. Think, too, of the human voice. In modulation it is capable of indefinite melodies more tantalizing and satisfying than Wagner himself has written. The voice is the spirit, the soul of movement, movement which the subtlest curves of an artist's pencil or sculptor's chisel can but catch to petrify : music itself is only the movement of a perfect voice. And yet with such resources in themselves, men and women of leisure will turn to paint or clay or the piano, thinking indifferently-acquired accomplishments in these directions can—O lamentable, scandalous neglect ! Think, think, too, when a man has so trained his instrument, his body, that every gesture, every intonation is expressive, what a part he has to play ! Whoever he is, it is one more intricate and unique than genius ever wrote for an actor on the stage. Now

the student of kaloprosōpy begins his inner task : he must decide what he is, and behave accordingly. Society, institutions, traditions, all come to his aid. What figure is less æsthetically-expressive than a country rector or a Member of Parliament ? Yet I never see a specimen of these familiar types without being overwhelmed with a sense of their opportunities. What is a rector ?—an Ambassador from Heaven. He should be absent and remote. His silence should be full of unction, and his speech of enthusiasm. He should never laugh, and never joke. He should not read the papers in public, nor by word or deed convey that he is part of the civil order. And the Member of Parliament, what is he ?—the Physician of the Body Politic. *He* may smile ; but he, too, is better grave and silent. The power he wields over liberty and life should weigh upon him like a sorrow. Nor can he show a personal sentiment without avowing himself unworthy of his abstract role of justice and utility.”

At this point a question rose to my lips : “ But would not kaloprosōpy, if widely and conscientiously practised, lead to a good deal of posing and humbug—not to speak of loss of happiness and amusement ? ”

“ On the contrary it would destroy hypocrisy. Life would cease to be tolerable if what was within a man did not correspond to his outward expression. Besides, remember what St. Ignatius said : ‘ Perform the acts of faith, and faith will come.’ ”

I was not prepared to argue with a saint, and thinking that a tentative course of kaloprosōpy might do me no harm, I proposed myself as a pupil.

“ I shall be happy ; you will be my first.”

During the last ten minutes of his discourse, had I not been listening intently, I should have been distracted by an intermittent shower of small missiles, twigs, and pebbles, which kept coming

from behind. Finally, quite a large clump of earth caught me on the back of the neck, and another knocked the philosopher's hat over his eyes. There was a juvenile squawk of "Old Soapy," and looking angrily round, I saw two urchins making off among the trees. I turned to my master: "Would it be a very bad beginning if I ran after those brats?" I am not sure I was right, but I interpreted a movement of his head, which may have merely expressed contempt, as assent, and started in pursuit. After an exhausting chase I caught one of them, and administered punishment with what will probably prove to have been the last ungainly gesture of my life.

UGLINESS

HE was leaning with his elbow on the mantel-piece, gazing into the looking-glass, with his head cocked a little to one side. I heard him murmur : " Ugly ? Yes, but there's something attractive about the face ! " The next moment he caught sight of my reflection behind his own, and spun round with an expression which any Macbeth confronted with the ghost of Banquo might have envied.

What, kind-hearted reader, would you have done in my place ? Laughed ? I hope not. I made a friend, or rather a devotee, for life. I went straight up to him and said : " Perhaps you feel foolish, but what you said is *perfectly true*." I have treated him, I fear, inconsiderately many times since then (he is an awful bore), but he is devoted to me still, and seldom meets me without delicately hinting that he will " cut up " much better than people expect. The moral is . . . but it is not with worldly morals I am concerned ; I want to talk about being ugly.

It is not the ugly we handsome fellows commiserate ; it is the plain ; the people who provoke in those they accost an impulse to say : " I remember your name, but I cannot remember your face." Most men are sensitive about their appearance, though few to the extent of the Roman Senator Fidus Cornelius, who, as every school-boy knows, burst into tears (*circ.* A.D. 60) when Corbulo declared that he resembled a plucked ostrich. It is possible to be magnificently ugly,

but you cannot be magnificently plain. And yet I can imagine circumstances in which it would be gratifying to overhear a comment upon the insignificance of your personal appearance.

Imagine a crowded railway station, and yourself an author whose fame is just beginning to sprout. The platform is lined three deep; there will evidently be a rush for seats, and all faces are turned towards the in-coming train. Suddenly, at this absorbing moment, you hear someone behind you say :

“Look, look ! Quick, there’s X.”

“Who ? Where ?” replies another, unmistakably eager voice : “Not the man who wrote . . .”

“Yes, there, on your left—behind you.”

And if the second voice were then to exclaim : “What ! *That* little man !” the very depth of disappointment expressed in its tone would be a proof of your literary talent. You would know you had written well.

Of course, if whiffs of fame kept coming your way in this form, it would, in the end, be depressing ; but the first time I am sure you would tingle with pleasure.

But if the circumstances in which a plain appearance can be a source of gratification are rare, ugliness, on the other hand, real crushing ugliness, is a sort of distinction. You remember Lamb’s discussion in his *Popular Fallacies* of the saying : “that handsome is as handsome does” ? Anyone who uses this proverb, he says, can never have seen Mrs. Conrady without pronouncing her to be the ugliest woman that he ever met with in the course of his life. “The first time that you are indulged with a sight of her face, is an era in your existence ever after. You are glad to have seen it—like Stonehenge. Locketts are for remembrance ; and it would be clearly superfluous to hang an image

at your heart, which, once seen, can never be out of it."

The essay makes one envy the lady, and Lamb's conclusion, to which the reader inevitably assents, is that true ugliness, like true beauty, is the result of harmony. Lamb defies "the minutest connoisseur to cavil at any part or parcel of the countenance" of the lady in question. Mrs. Conrady convinced him that, if one must be ugly, it is better to be ugly all over, "than, amidst a tolerable residue of features, to hang out one that shall be exceptionable"; in short, far better to be down-right hideous. And I would add a gloss to this. Ugliness is not only a distinction; it may also serve as a palladium to its possessor, or as a weapon in the struggle of life.

In the terrible battle of Camlan, that fatal field where King Arthur fell with all his chivalry, only three Christian Knights survived: Sandde Bryd, who was so lovely to look upon that not one of the victorious heathen had the heart to strike him; Glewlwyd Gavaelvawr (or Great Grasp), the porter to King Arthur, whose prodigious thews made all unwilling to attack him; and Morvan ab Teged, who was so overwhelmingly hideous that the foe fled from him as from a demon out of hell. These three stalked through the battlefield, unscathed as gods.

The ugly should take this piece of history to heart. Let not, therefore, those dowered with an eye-searing ugliness reproach Nature, or throw away their singular endowment by attempting to mitigate their striking features. In dominating our fellows, the heavy lids and deliberate movements which suggest a saurian monster of the extinct world, the jaw which rivals the maxillary equipment of the larger apes, the complexion which in a savage tribe would render war-paint superfluous, these may

prove important assets. To be as "ugly as a mud fence," as they used to say "Out West," is nothing; but to vie in appearance with the inauspicious monsters of the deep may be of incalculable advantage. Would Mirabeau, do you think, have dominated the beginning of the French Revolution if he had been a pleasant-featured man?

I am no nasologist, but who was not impressed by "the perpetual triumph, the everlasting bonfire-light"—to use Shakespeare's phrase—which accompanied the late Mr. Pierpont Morgan's victorious career? And even those among the ugly whose longings are more amorous than ambitious, what need have they to be diffident? The obviously presentable among the male sex may shrug their shoulders at women's whimsies, but experience shows that the man "with some architecture about him," however Gothic, is in wooing more than the match of the comely suitor. Wilkes, who was considered easily the ugliest man of his day, and whose portraits bear this out, boasted that he could give the handsomest man in England half an hour's start in the race for favours, and beat him. "Doesn't Mr. Wilkes squint abominably?" someone asked a lady, who had met him. "Yes, he does," she replied thoughtfully, "but not more than a gentleman ought to." Review for a moment in your own mind the most successful "ladies' men" you have known. What facial types predominate? The empty barber's block, the clean monkey, and the hairy gorilla. Fellows with pleasant, handsome human countenances stand no chance.

EPITAPH-WRITING

AS a frequent visitor to churchyards, I have come to the conclusion that the art of epitaph-writing is dying or nearly extinct. Someone once described a cemetery as a garden in which the labels had come up instead of the flowers. On the more recent labels I have seldom found anything worth reading : a name, a date, a text, or verse of a hymn—that is all. But our forefathers differed from us in this ; the art of memorial inscription was a recognized one. Its canons have been discussed by many, notably in England by two great writers, Wordsworth and Dr. Johnson. Wordsworth's essay is so good that I dare not re-read it for fear of submitting slavishly to his criteria. To Johnson's *Essay on Epitaphs* I will come presently ; but first I want to put this question : Why have we given up writing epitaphs ?

I think the answer is that we are both too self-conscious and too unconventional. We know that the laudatory generalities and lists of attributes which our fathers inscribed above their dead could not describe, except very vaguely and partially, any human being ; the convention has been destroyed by lack of faith and a growing sense of the complexity of human-nature. On the other hand, we are too self-conscious to express our grief. Epitaph-writing, we feel, is an exception to the rule that "what is worth doing at all is worth doing badly." Our predecessors did not, however, feel that it was. We content ourselves by saying : "Here lies the beloved wife or husband,

EXPERIENCE

son, daughter," as the case may be, of "so-and-so, who died, etc. etc. : Text." Not that our forefathers' epitaphs were always entirely laudatory ; here is a striking example of the contrary which can be read in Horsley-Down Church, Cumberland :

Here lie the bodies
of THOMAS BOND and MARY his wife.

She was temperate, chaste and charitable ;
But

She was proud, peevish and passionate.
She was an affectionate wife, and a tender mother ;
But

Her husband and child, whom she loved,
Seldom saw her countenance without a disgusting
frown,
While she received visitors whom she despised
with an
Endearing smile.

Her behaviour was discreet towards strangers ;
But

Independent in her family.
Abroad, her conduct was influenced by good
breeding ;
But

At home, by ill temper.
She was a professed enemy to flattery,
And was seldom known to praise or commend ;
But

The talents in which she principally excelled,
Were difference of opinion and discovering flaws
and imperfections.

She was an admirable economist,
And, without prodigality,
Dispensed plenty to every person in her family ;
But

Would sacrifice their eyes to a farthing candle.

EPITAPH - WRITING

She sometimes made her husband happy with her
good qualities ;

But

Much more frequently miserable with her many
failings :

In-so-much that in thirty years cohabitation he
often lamented

That maugre all her virtues,

He had not, in the whole, enjoyed two years of
matrimonial comfort.

AT LENGTH,

Finding that she had lost the affections of her
husband

As well as the regard of her neighbours,
Family disputes having been divulged by servants,

She died of vexation, July 20, 1768,

Aged 48 years.

Her worn-out husband survived her four months
and two days,

And departed this life, Nov. 28, 1768,

In the 54th year of his age.

WILLIAM BOND, brother to the deceased, erected
this stone,

As a *weekly monitor*, to the surviving wives of this
parish,

That they may avoid the infamy

Of having their memories handed to posterity

With a PATCHWORK character.

The first principle that Johnson lays down is that those epitaphs are the best, which set virtue in the strongest light, and are best adapted to exalt the reader's ideas and rouse his emulation. As usual, he judges as a practical moralist. In the case of the truly eminent it is not necessary to recount their achievements : the bare name of such men answers the purpose of a long inscription. But none but the first names can stand unassisted

against the attacks of time ; the rest require an interpreter. It is in the composition of such epitaphs that art is required. Epitaphs, says Johnson, do not admit of "the lighter or gayer ornaments" permissible in Elegies, for due regard must be observed to the solemnity of the place, and nothing trifling or ludicrous must be allowed. Praise must not be general, "because the mind is lost in the extent of any indefinite idea, and cannot be affected by what it cannot comprehend." The inscriber need not consider himself bound to historical impartiality. "On the tomb of Mæcenæ his luxury is not to be mentioned with his munificence, nor is the proscription to find a place on the monument of Augustus." In short, Dr. Johnson is against the "patchwork" epitaph, and as he said to Boswell, "in lapidary inscriptions a man is not on his oath." "The best subject for epitaphs," he continues, "is private virtue ; virtue exerted in the same circumstances in which the bulk of mankind are placed, and which, therefore, may admit of many imitators." He quotes two Greek inscriptions, one of a woman whose memory is preserved only in her epitaph, the other of a famous writer ; both were slaves, "the most calamitous estate in human life." The first reads in translation thus :

"Zosima who in her life could only have her body enslaved, now finds her body likewise set at liberty."

"It is impossible," says Johnson, "to read this epitaph without being animated to bear the evils of life with constancy, and to support the dignity of human nature under the most pressing afflictions." The other is upon Epictetus :

"Epictetus, who lies here, was a slave and

EPITAPH - WRITING

a cripple, poor as the beggar in the proverb,
and the favourite of heaven."

A noble panegyric which should also comprise instruction was Johnson's idea of the perfect epitaph.

Thus he would probably have had little praise for the touching inscription over the unknown Roman dancer, *Saltavit et Placuit*; nor would this Greek one, I think, have satisfied him, yet it is one of my favourites:

"Sit beneath the poplars, here, traveller, when
thou art weary, and drawing nigh drink of our
spring; and even far away remember the
fountain that Simus sets by the side of Gillus
his dead child."

Dr. Johnson believed too firmly in the impressiveness of direct exhortation. To me, the mood of tenderness that inscription conveys, the sense of a personal sorrow which has diffused itself as a friendliness towards the whole world, including the passing stranger, is worth any list of virtues and accomplishments which we should, no doubt, do well to emulate.

When people write their own epitaphs they frequently betray themselves. Here is such a one, which makes me know and dislike the man whom it commemorates:

WILLIAM HUNTINGDON S. S. ob. 1813.

Here lies the Coalheaver,
Belov'd of his God but abhorred of Men.
The Omniscient Judge at the Grand Assize
Shall ratify and confirm this
To the confusion of many thousands:
For England and its Metropolis shall know
That there hath been a Prophet among them.

W.H.S.S. Sinner Saved.

THE CROWDS AT BURLINGTON HOUSE

THE tremendous crowd which gathers every day from all parts of England to see the Exhibition at Burlington House is a most curious phenomenon. It is a tribute to the prestige of art, not of course a sign of love for it, or understanding of it. The National Gallery remains empty. What then makes all these people rush to get a peep between each other's shoulders at these pictures? Curiosity—they like to glance at famous and very valuable objects. Social obligation—owing to the dearth of conversational openings they find themselves incessantly asked, "Have you seen the Italian Exhibition?" or, "Are you going to the Exhibition?" Vanity and uplift—a reluctance to admit indifference to art, and a faint hope that it may be overcome. Lastly—sheep-in-a-gap, follow-m⁷-leader instinct. The majority of those streaming out (read their faces) have experienced a "something-attempted, something-done" satisfaction; the majority streaming in, feel "I am doing what an educated person ought to do." Few of them, however, stop opposite any picture for a quarter of the time they do in front of something for sale at Selfridge's. They loiter round and round in a mazed condition of vaguely elevated depression; and no mood can be less propitious for art, since depression is a non-conductor, and vague longing to be impressed destructive of discrimination. Of pairs doing the Exhibition together, the one who reads in a low halting gabble from the catalogue usually appears the happier; but there comes a

moment when he, or she, also, must gaze at the picture described before passing on. Oh, that moment of blank effort to respond; the muttered misery of his or her ineptitudes! "That's . . . don't you think? . . . I like. . . Yes, yes, a distinct look of Aunt Mary, and aren't the baby's legs wonderful?"

The few but crowded benches display the unostentatious stoicism of the railway waiting-room. There the old who have won the game of musical chairs enjoy a mild sense of triumph, but no view. They are to be commiserated least. The exhausted sweetly-sour atmosphere has devitalized them, but they are seated. Nor must we pity the children, who from a peep at the pictures between thighs lift their faces to catch from their parents appreciation of their artistic zest: they are buoyed up by the pride of extreme youth in sharing what they suppose their elders enjoy.

It was the great moving, muddled, middle-aged mass that touched me. Why were they there! What had they come for? In a fashion I have already answered those questions, and in the study the answers satisfy. But in the presence of the Phenomenon they seemed inadequate: there was no pushing or thrusting; the public washed up gently against the walls like driftwood sluggishly circulating in a current; their mutual consideration was perfect, and reminded me of journeys in the Tube during the War when all were sobered down to even kindness by common calamity. Oh, Culture, what cruelties are committed in thy name!

It is inevitable that the dogged pursuit of culture should implant in the human heart a deep unconscious hostility to art; and what is worse, arrogance. Art is a living force ever taking new forms, and its transmigrations are least likely to be recognized by those who have painfully approached

it in the hope of self-improvement and not in pursuit of pleasure.

At this point I can imagine my reader interrupting me. "Ah, I know you. You're one of those superior persons who, believing they understand art themselves, are anxious, with dog-in-the-manger vanity, to suggest that the perceptions they enjoy are beyond the reach of ordinary humanity." Acute, but hypercritical reader, you are mistaken. Pictures have meant very little to me compared with the beauty which is transmitted through the written word. All I have obtained from them is a mild but constant pleasure. In the mildness of that response I resemble the crowd. For such as me, it is the constancy and reliability of the pleasures of the eye which constitute the chief part of its value. It is more detached from mood and circumstance than the satisfactions which literature can give, though it is far less strong. I have met in my life some half-a-dozen people of whom this was not true, who lived through the eye with an intensity which I can just imagine but can never experience. It is therefore as one of the crowd that I address those who resemble me.

Firstly, there is nothing disgraceful in being unable to appreciate painting; the disability is too common to be distressing. The important thing is to get rid of the idea that in such matters one's opinion and taste are of consequence. This at least will restrain one from tarring and feathering, either in conversation or in fact, anything new which has not yet prestige behind it. It has also a further advantage. Once rid of a sense of responsibility, one is free to enjoy what one can; and this freedom brings one nearer in spirit, though not necessarily in taste, to those to whom painting is really important. People seldom lie more flatly than when they utter with exasperating modesty

the familiar formula, "I know nothing about art, but I know what I like." If they spoke the truth they would say, "I have some idea what others think I *ought* to like, but I have not the smallest notion what I do."

The safest approach to the art of painting is not through the gate of aspiration or self-improvement, but through the humble door of pleasure, and the first step to culture is to learn to *enjoy*, not to know what is best. It is not true that we needs must love the highest when we see it, only vanity ever convinced anyone that it was. Those who do not deceive themselves need no enlightenment on that point.

OBSCENITY AND THE LAW

IN 1928 and 1929 two novels were successfully prosecuted, *The Well of Loneliness* and *Sleeveless Errand*. *The Well of Loneliness* has been sufficiently discussed, and even those who sympathized with its suppression now see that it was a mistake to have given it prominence by instituting proceedings. It is said that 60,000 copies have been sold in Paris alone as a result of its "destruction"; scarcely a thousand would have been bought unless the Home Secretary had moved in the matter. In *The Well of Loneliness* there was not an obscene word nor one passage of alluring description, but the story asked sympathy from the reader on behalf of women who are so constituted that they fall in love with their own sex; though not obscene, it might, therefore, be held to be immoral. The case of *Sleeveless Errand* is an exact converse, except that in it, too, there are no alluring descriptions. *Sleeveless Errand* is a novel which contains gross and vulgar expressions, though it is an austere moral indictment of sordid sensuality and lack of decent human standards. In the case of *The Well of Loneliness* the reserve and decency of the author's treatment of her theme was held to be no defence against the charge of immorality; in that of *Sleeveless Errand*, though every incident described was deterrent to sympathy, this was not regarded as excusing the realism of the "talk" reported in it. In my own opinion it was a novel which every youth and girl tempted to join a tippling, promiscuous set such as the author

describes, might well read with profit; I know several sensible parents who have borrowed it for their children.

The conclusion that many people have drawn from these two decisions is that the law should be altered. But, speaking as a layman, after reading the Act of 1857 and the leading case under it, namely *Regina v. Hicklin*, 1868, I am inclined to think that pending a better definition of obscenity—certainly needed—what is required and should be obtainable at once is a more precise application of the actual law.

All proceedings against books are taken under Lord Campbell's Act "for more effectually preventing the sale of obscene books, pictures, prints and other articles." When introduced in 1857 this Act was regarded as a mere police measure. It roused little interest among men of letters; Disraeli, Macaulay and Bulwer-Lytton, the leading men of letters in politics, were silent. Monckton-Milnes was, I think, the only literary man who took part in the debates, and he supported it; the *Athenæum* did not think it worth mentioning. Its prime object was the suppression of a trade in obscene books and pictures which flourished particularly in Holywell Street. Lord Campbell, in his autobiography, notes that it was instantly successful there, and that this traffic was stopped; also that in Paris the police had begun in consequence to "purify" the shops in the Palais Royal which catered for British tourists.

The vital clause in that Act runs as follows: "If upon complaint there is any reason to believe that any obscene books, etc., are kept in any house or other place, for the purpose of sale or distribution, and upon proof that one or more such articles

has been sold or distributed in connexion with such a place, justices may, upon being satisfied that such articles *are of such a character and description that the publication of them would be a misdemeanour and proper to be prosecuted as such*, order by special warrant that such articles shall be seized, and after summoning the occupier of the house, the same or other justices may, if they are satisfied that the articles seized are of the character stated in the warrant, and have been kept for the purpose aforesaid, order them to be destroyed." The words I have italicized have an importance which has been overlooked. It is clear from them that it is *not* sufficient to prove that a book is "obscene" (whatever the legal definition of that word may be) in order to justify its destruction. The magistrate must also be satisfied (a) that it is "of such a character and description that the publication of it would be a misdemeanour"—that is to say, that its publisher could be convicted before a common jury for issuing an "obscene libel"; and (b) that the book is "proper to be prosecuted as such." Condition (a) is a clear direction to the magistrate not to condemn a book because he is shocked by it himself, but to ask himself what conclusion a jury would probably reach after hearing all that could be urged in the publishers' defence. The meaning of condition (b) is brought out—and it is vitally important—by the comments of the judges in the case of *Regina v. Hicklin*, the case which also furnishes Chief Justice Cockburn's definition of obscenity, now applied by magistrates to all books brought before them, namely, "I think the test of obscenity is this, whether the tendency of the matter charged as obscenity is to deprave and corrupt those whose minds are open to such immoral influences, and in whose hands a publication of this sort may fall."

Now, when a book has been shown to contain passages capable of corrupting minds capable of being corrupted, it is to-day taken for granted by magistrates that the book is condemned under Lord Campbell's Act. I speak as a layman, but the comments of Lord Blackburn and Mr. Justice Mellor, who were Chief Justice Cockburn's co-judges in this case, strongly suggest that this is *not* the proper interpretation of the law.

The Chief Justice himself quoted the additional and necessary conditions, but it was Mr. Justice Blackburn (as he then was) and Mr. Justice Mellor whose comments explained their importance—Mr. Justice Lush acquiescing. What do the words "proper to be prosecuted as such" mean? Lord Blackburn, who is regarded as one of the greatest English judges, after reading the section of the Act quoted above, said: "I think with regard to the last clause, that the object of the legislation was to guard against the vexatious prosecutions of publishers of old and recognized standard works, in which there may be some obscene or mischievous matter. In the case of *Reg. v. Moxon* and in many of the instances cited by Mr. Kydd (Counsel for the defence in the *Hicklin* case), a book had been published which, in its nature, was such as to be called obscene or mischievous, and it might be held a misdemeanour to publish it; and on account of that an indictable offence. In *Moxon's* case the publication of *Queen Mab* was found by the jury to be an indictable offence; I hope I may not be understood to agree with what the jury found, that the publication of *Queen Mab* was sufficient to make it an indictable offence. I believe, as everybody knows, that it was a prosecution instituted merely for the purpose of vexation and annoyance. So, whether the publication of the whole of the works of Dryden is or is not a misdemeanour, it would not

be a case in which a prosecution would be 'proper'; and I think the legislature put in that provision in order to prevent proceedings in such cases." It is clear, then, that in Lord Blackburn's opinion the words "proper to be prosecuted as such" are not a necessary presumption of law from the finding that the work in question contains "obscene" matter, but a separate and essential condition, inserted to safeguard from prosecution works which would otherwise come under Lord Campbell's Act. They are, in fact, a provision for the protection of "recognized standard works," i.e. works whose literary merit has been recognized. Mr. Justice Mellor's comment goes, I think, further, but to make its bearing clear it is necessary to say a few words about the actual case which was before the court at that time.

In 1868, Henry Scott appealed against an order made by two justices under Lord Campbell's Act whereby a book entitled *The Confessional Unmasked* had been condemned to be destroyed. The argument for the defence was that the obscene matter contained in it (extracts from the works of certain theologians on the practice of auricular confession) were justified as a means to exposing evils, and that the book was a controversial one and written with the object of doing good. Mr. Justice Mellor's comment was as follows: "I confess I have with some difficulty, and with some hesitation, arrived very much at the conclusion at which my Lord and my learned Brother have arrived. . . . The nature of the subject itself, if it may be discussed at all (and I think it undoubtedly may), is such that it cannot be discussed without to a certain extent producing authorities for the assertion that the confessional would be a mischievous thing to be introduced into this kingdom; and therefore it appears to me very much a question

of degree, and if the matter were left to the jury it would depend very much on the opinion the jury might form of that *degree* in such a publication as the present. . . . It does appear to me that there is a great deal here for which there cannot be any necessity in any legitimate argument on the confessional and the like, and agreeing in that view, I certainly am not in a condition to dissent from my Lord and my Brother Blackburn, and I know my Brother Lush agrees entirely with their opinion. Therefore, with the expression of hesitation I have mentioned, I agree in the result at which they have arrived."

Now, if we put together the *obiter dicta* of these two eminent judges, we arrive at an interpretation of Lord Campbell's Act which is, firstly, much more in harmony with the spirit of its preamble, "whereas it is expedient to give additional powers of suppression of the trade of obscene books," and secondly, an interpretation which obviously does not carry due weight with magistrates to-day. Lord Blackburn says that the words "proper to be prosecuted as such" were intended to exempt from prosecution, on the ground of containing mischievous or obscene matter, "old and recognized standard works"; and Mr. Justice Mellor (also a judge of high repute) adds the gloss that, in the case of other books, the question whether any obscene matter in them brings them under the Act is *one of degree*, the object with which such matter is introduced being taken into consideration in determining that degree.

It is not an uncommon belief among elderly men in whose lives literature plays a subordinate part, that only "old" masterpieces are of any importance to mankind. Lord Blackburn, in interpreting the words "proper to be prosecuted as such," as a provision deliberately inserted in the

Act to protect literature, forgot for the moment that it is still possible to add to the world's store of "standard works"; and, with all respect to so eminent a lawyer, those words he was interpreting afford no support for refusing to extend the same protection to all works of genuine literary value which do not aim at obviously pornographic effects. Mr. Justice Mellor, I think, saw this. At any rate, such a criticism is implied in his *obiter dictum* that the degree of obscenity permissible depends upon the nature of the work: a principle which is, by the by, entirely destructive of Lord Cockburn's definition of indictable obscenity as anything which might corrupt anyone. Yet how far these considerations are from influencing the magistracy to-day, I myself had proof when I, along with many literary men more distinguished than myself, attended as a would-be witness the *Well of Loneliness* case. Sir Chartres Biron then ruled that the question of literary merit was entirely beside the point. Mr. Birkett was not only not allowed to produce his witnesses, but he was not allowed to read the critical judgments upon the book which had appeared in the most reputable papers and journals. I could not help reflecting how much less fortunate he was than "Biron for the defence" in the case of *Regina v. Thompson*, who secured the acquittal of Thompson for publishing the *Heptameron* by relying on the *dictum* of Lord Blackburn and by reading, without objection from the Court, extracts from the *Encyclopædia Britannica* and the *Edinburgh Review* to prove that the book in question had literary merit. Logically, in the case of a recent book, the equivalent of reading a critic's opinion from the pages of the *Encyclopædia* must be to read criticisms from reputable contemporary reviews. If Lord Blackburn's interpretation of the words "proper to be prose-

cuted as such " is correct, and they were intended to protect works of " recognized merit," there is no reason why contemporary recognition of merit should not entitle a book to protection.

Lord Blackburn says that the Act contains a special provision for the protection of " recognized standard works," and he instances those of Dryden; Mr. Justice Mellor that the question whether a passage is obscene or not is dependent upon the nature of the work in which it occurs. Lord Blackburn expressed disapproval of the prosecution of *Queen Mab*, apparently because by his time it had become a standard work and enjoyed the protection which the legislature had given to standard works. He regretted the prosecution was successful. But how can any book become a " standard work," even should it deserve to become one, if it is destroyed on publication, and if those who order its destruction refuse to consider whether or not it possesses literary merit, or to hear evidence on the point ?

I do not say that *Sleeveless Errand* would have been destined to become a classic, but it was clear to me—and after all I am something of an expert in such matters, having spent my life in the study of literary methods—that the degree of obscenity in it was very slightly, if at all, in excess of what was necessary to effect the author's legitimate purpose, that of exposing the ugly, dismally dilapidated condition of a group of young people, who certainly exist, whose lives even have a sort of glamour for others who have not seen them close, and whose " speech bewrayeth them." That the purport of *Sleeveless Errand* was moral was not disputed, but ignored. It was condemned on the ground that it contained coarse expressions, and

because much of the talk suggested in the speakers an ignoble and irresponsible attitude towards sex, society, and religion ; that is to say, because the book infected the reader with precisely the kind of aversion from them which the author intended him to feel. It might very well have been defended successfully before a jury.

And what is the upshot ? It is this : that if the Home Office, when they cause a warrant to be applied for, and the magistrates when they hear the case, would consider, what in Law they are bound to consider, not only whether the book in question is obscene, but also whether the publication of it would properly lead to the prosecution of the publisher, and if they would give full weight to the *dicta* of the eminent judges who have interpreted Lord Campbell's Act, we might then keep that Act as the salutary check it was intended to be upon traffic in pornography. It might be kept without any damage to literature, and without interfering with that perpetual pooling of knowledge and experience on which civilization depends. But if they do not do this, then the law will inevitably fall into complete disrepute with reasonable people, and how bad that is for the moral sense of a community everyone with an inkling of statesmanship knows.

ETON

BOOKS that I have read are like old diaries to me. I find my old self in their pages. Do I want to be back in my School Library?¹ I have only to open some book I first read there and as I allow my mind to wander, I see again the long book-lined room; the busts, the model of the Acropolis, the large diamond-paned windows, the leather-topped tables, and the attitudes of the boys sitting at them. I hear the whispers and suppressed giggles. Again I see the look of well-simulated amazement on the face of the precise, tiny Librarian, when someone brings a Greek Lexicon down on the bowed head of a fellow-student. Do I wish to recall those twenty minutes of peaceful solitude (tea-time in my own room) between cooking for my fag-master and carrying up three flights of leaded stairs cans of hot water for his bath, and then running through dark streets to pupil-room? Well, I need only open some novel like *The Deemster* and dream upon its pages. Instantly I am in the past again. Back it comes to me: the look and smell of my indigestible new loaf, whose doughy centre, well-squeezed, made such an excellent missile; its crust, which was a mere pretext for huge dollops of jam; my printed red-flannelette table-cloth, and even that after-football

¹ Before the South African War Memorial was built the School Library used to be on the upper storey of the New Schools.

feeling in my legs—if I had played well, such a delicious tingle!

Eton is very great, very big, very old and very rich; certainly far more reminiscences of Eton are published than of any other school. This is not astonishing, for Eton stands near the main thoroughfare of the world, and often catches the eye; while her own public is the largest for which books of this special kind are written. Nevertheless I, who was at Eton, am sometimes made uneasy by the tone of these books. Many seem to take for granted that the greater public, if it does not share the Eton sense of proportion, will at any rate try hard to do so, and that they will all be glad to pretend for a while to be old Etonians. This does not appear to be unnatural, but experience has taught me that it is not always the case. I have been sometimes embarrassed by such books, as we are sometimes embarrassed abroad by the confident yet very proper sentiments of a fellow-countryman. Could I read a book describing the appearance and analysing the temperament of old "Biped Brown" of Marlborough, or "Pinker Dickson" of Winchester? Frankly, no. My inability is shown by the fact that I have actually had to invent these striking personalities; for, with the exception of "Bowen of Harrow," I do not know even the name, let alone the nickname, of one bygone master at any school but my own. I feel sure such ignorance is reciprocated by old boys of other schools.

I have just been reading Mr. Percy Lubbock's *Shades of Eton*. Some of the figures, which do not require even a touch from his elegant pen to live for me, which need only be named to rise as vividly before my eyes as Nelson or Mr. Micawber, must surely appear empty of significance to any but Etonians. How, then, are these unfortunates to

know when Mr. Lubbock has deftly hit off some characteristic? What interest would there be to the public were I to venture to correct his drawing, say, of a nose? These rhetorical questions answer themselves, or will be answered by my silence about those parts of the book which could not fail to be interesting to Etonians, but to them alone. *Shades of Eton* is, however, much more than a gallery of such portraits. It is, from one aspect, a self-effacing man's story of his own education, and raises questions of wider interest. It can be read as a book about Eton, or as a chapter of autobiography, or as a subtle discussion of public-school and classical education. Fortunate is the reader who can read it from these three points of view at once.

Mr. Lubbock is one of the comparatively few contemporary prose-writers of whom it can be said that he has thoroughly mastered his craft. He writes with a beautiful precision. The suavity and the subtlety at which he aims he attains; though the kind of perceptions which he wishes to record are by no means always easy to convey. He can express his own sense of the beauty of outward things; and where character is concerned he has learnt the art of insinuating without being treacherous, of being even very kind without being very vague. His imagination in retrospect is deeply tinged with "piety" in the Roman sense of the word. Close contact with Henry James may well have deepened in him this mode of feeling—Henry James who was so horrified at the offhand wasteful callousness of the world, and whose imagination often liked to rest beside considerate, scrupulous people in the quiet garden of tradition. I seldom notice in Mr. Lubbock's use of words the imprint of that influence, but I detect it in his distrust of bare statements. In Henry James, revulsion from such

statements, when they might hurt, led him into periphrastic and metaphorical hesitations which by delaying a perhaps fatal verdict often made it in the end more crushing. Thus in conversation when he had done speaking one was sometimes reminded of that comment upon Renan : "*le plus doux des hommes cruels.*" And yet Henry James was not cruel. He had a merciless eye and a tender heart, and in a style of delicate and prolonged ingenuity he strove to combine the reports of the one with the promptings of the other.

Mr. Lubbock, also, is a writer of complex sensibility, but he attains unity by refraining rather than by combining. His charming book *Earlham* suffered in a measure from a too uniform diffusion of "piety" and sweetness, and the *Shades of Eton* are bathed, to my understanding, in too still and golden an air. I suspect him of having explored his past only where he could bless and praise. A writer so sensitive, so responsive to whatever in our precarious muddled state of being is gracious, ordered, gentle and safe, must have been frequently excruciated at a public school; and a boy so precociously alert must have seen many shortcomings in those who educated him. But of such excruciations and such defects there are few traces in the story of Mr. Lubbock's education, only a hint or two that he was often far from happy during it. It may seem odd, at first, that one who like myself enjoyed wildly every day of his school life—except, of course, those black intermittent days on which carelessly-provoked calamities trod him down—should complain of such omissions. Yet, after all, it is not strange. Whatever has given us massive satisfaction we can afford to criticize with ungracious freedom.

Mr. Lubbock says that he who tells us he was happy at Eton tells us much about himself but

nothing about the school. This is not so true as he thinks. If different kinds of boys are happy at a school, it tells us something most important about it. He and I were, I think, contemporaries, and yet in a sense we were not at the same school. His Eton is composed entirely of masters and traditions, mine of boys and places. He was educated by masters, I by boys.

This difference is a typical one, and one which confuses the whole discussion about public-school education. The boy-educated—and they are the majority—cannot understand these pedagogic heart-searchings. Mr. Lubbock reports Arthur Benson as saying sadly, "But we don't educate these boys." "I should think not," the boy-educated is inclined to reply, rather impatiently. "How can a handful of masters educate in any intense manner a thousand boys or more?" One young mind out of ten they can affect, certainly not more. Masters must, of course—and they can—prevent the community from degenerating into squalor, and drum some elementary information into those thousand heads; but what more can they do? And, after all, would more be generally desirable? There are grave deficiencies in the education of boys by boys, but the adultly-educated often suffer from a drawback: they cannot henceforth get on with, or get anything out of, anyone as young as themselves. There is something so restful and gratifying in the companionship and approval of a mature mind that they cannot afterwards stand the sharp illuminating crudity of their own generation. This, too, may be a disadvantage.

When I talk to a dog I am sometimes reminded of myself and my masters. Nothing could be seemingly more responsive than the dog; but at the sound of a distant bark its whole being is suddenly possessed by the quiver of a very different

attention ; I am forgotten. I, too, could once only attend to barks. I could be made for a few seconds to sit up with pendent paws for a biscuit, and if scratched behind the ears I capered and ran in circles with delight ; when my masters talked to me I heard them, but I only listened to barks. Reviewing my contemporaries, this seems to have been the case with most of them. The yapping and baying and growling and belling, to me the most exquisite of concerts, is a pandemonium against even the memory of which Mr. Lubbock stops his ears. Indeed, I can only recognize *his* Eton by recalling the impressions of my subsequent visits. Then I see that this master contributed this kind of culture, that one that ; but I should never have known it had I not gone back. The doors which opened for him upon refuges, and revelations, and intervals of happiness, were doors I never even saw. Do I regret it ? Hardly ; there was so much outside—besides, I walked in later on. And yet we are both grateful to our school ! That boys so different can both be grateful does tell others something important about it.

Some of the most enchanting and penetrating pages of this book are a discourse upon the value of that old-fashioned scholarship which transmutes the classics into something quite unlike themselves ; presenting them not as expressions of human passions and adventures in thought, but as those queer static things, *books*. “The Greeks and Romans, indeed, were remarkably trimmed and chastened,” Mr. Lubbock truly says, “before they could settle down in the valley of the Thames.” “To what purpose,” he asks, “have you loved those adventures of genius if you aren’t a terror to all quiet minds ? Others may dream and moon in repose upon a time-approved culture ; but the learned Grecian is a man, he must be, of a restless

and realistic temper, keen, mobile, immodest, grasping the good gift of life with avid hands. There is an image, indeed, of the scholar of Eton ! ” And yet Mr. Lubbock has something to say, and to say exquisitely, in explanation of this process of domesticating the Classics, though he marvels at its queerness. But he does not marvel so much at the oddity of the actual process of imparting that culture to boys—and that is what I remember best.

I am again in a large, half-panelled room. At a raised desk sits a man in a university gown, and in front of him sprawl between thirty and forty little boys : the air hums with innumerable subdued noises. One of the boys is suddenly called upon to construe. After a hurried consultation with his neighbour he stands up with an air of apparent alacrity :

“ *O Venus—oh, Venus—regina—queen—Cnidi Paphique—of Cnidus and Paphus.* ”

“ Os, os,” interrupts the master mildly.

“ *Sperne—spurn—dilectam Cypron—delectable Cyprus—et—and . . .* ”

“ Well, go on, go on.”

“ I can’t find the verb,” says the small boy—then, suddenly, as though it had been dodging about, “ I’ve got it ! *Transfer ! transfer—te—thyself—decoram in aedem—to* ” (his voice quavers interrogatively) “ to the . . . decorated house ? ”

“ Come, come. You know better than that. You know what *dulce et decorum est pro patria mori* means : It is sweet and fitting to die for one’s country.”

“ The well-fitted house ? ” the small boy suggests, smiling to make up for a possible blunder. The master smiles too : “ No, no. The word suggests reverence, something almost sacred. The adjective together with the noun, the phrase *decoram in aedem* really means a ‘ shrine,’ or, if

you like, 'gracious house' would do here. Go on." The small boy's eyes meanwhile have been fixed in absent-minded wonder on his face.

"*Vocantis Glyceræ*" (should he risk it?)—"of shouting Glycerine." (General titters.)

"If you play the fool you'll sit down and write out the lesson. Sit down."

"But, sir!"

"Sit down!"

"But, sir, *vocantis* does mean shouting or calling."

"Sit down! I'll go on construing. Follow carefully and bring me a translation to-morrow. This is poetry: 'Of Glyceræ who invokes thee, *multo ture*—with much—or perhaps better—with a wealth of incense. *Fervidus tecum puer*—with thee may thy glowing boy.' Who was her glowing boy?" (General mild astonishment.)

"Yes, who was the son of Venus?"

"Oh, Cupid," another boy, lolling on hip and elbow, answers contemptuously.

"Cupid, of course. 'With thee may thy glowing boy and the Graces and the Nymphs with unloosened zones'—are you following?—'hasten hither, and Youth, who lacking thee is not charming.' " Here the master coughs, and ends rather lamely with "And Mercury."

"Quite a party," says the small boy who has been made to sit down. (Laughter.)

"You will write out the lesson twice."

"But, sir!"

"If you speak again you will write it out four times. Come up for a Yellow Ticket afterwards."

Such were our frontal mass-attacks day after day, week after week, month after month, year after year, upon the barrier of that ancient language. How few of us won through to the scholar's ilex-grove and the placid fields of asphodel!

BOXING

IT is a common device of editors, though it does not always succeed, to send every now and then the obviously wrong man to report on some event. Instead of going to a theatre one week, I went to see Freddy Welsh and Willie Ritchie fight for the light-weight championship of the world. I know nothing about boxing beyond having boxed occasionally with someone as helpless as myself; and all that experience comes to is a vague recollection of a kind of stuffy pain which results from being hit on the nose, and that it is easy to punch the other man's face though not to guard one's own. I recall, also, a pleasant kindling excitement, half temper and half "sporting."

I have known, too, what it is like to be hit hard. One evening at school we had been talking for hours, as boys will, about strength and physical prowess; and to support some argument I suppose, I offered to allow one of my friends, a boy of great bones and thews, nearly nineteen, and several years older than myself, to hit me as hard as he liked. The spot stipulated was the chest, and I hoped by suddenly expanding it to hurt his wrist more than he could hurt me. He took a run, and whirling his fist like a bowler, hit me in the eye. It was an illuminating blow: the next moment I was drowning in a sea of brown mud and fire.

It must have been a knock-out. With this experience in my memory you can imagine my enthusiastic excitement when, in the match preceding the Championship, I saw Danny Cripps

stagger up after a clout on the side of the head from Mike Sweeny, before the umpire had counted eight. How, sinking through that buzzing world of mud and fire, he could have heard the counting was hard to imagine. I can only suppose that just as some people can rouse themselves at a certain hour by a resolve firmly taken the night before, so the imperative "I must get up" was lodged in him deeper than waking consciousness.

There was no knock-out in the fight between Freddy Welsh and Willie Ritchie, and there were no falls. The hitting was no doubt harder, though the inexperienced spectator could not be sure of this. He could only see that the blows of Ritchie's which looked most dangerous, missed, and that both he and Welsh could stand a great deal more punching. I am not writing—it would be absurd—for people who know anything about boxing, or for those who want to know what happened each round (they presumably read the sporting papers, where these things are recorded with astonishing accuracy), but for those to whom the next boxing-match, if they go to it, will be as new an experience as this one was to me. Let me first give them a piece of advice. It is no use going to cheap seats—from those the antagonists on the platform look like two little dolls on a napkin. I dare say adepts can follow what is happening from that distance, but the stranger can only get excitement if he is quite near the ring. It is expensive, but you must be close enough to see what is happening when both boxers are hugging and jabbing each other in the nuzzling, tussling way two dogs fight on their hind legs. You ought, indeed, to be near enough to watch their eyes, but this is very expensive. Those sparring gestures when they are apart, bobs and feints, are often beautiful as movements, and often they are not. From a distance there is

great monotony in a fight. Your impression of it resolves itself into the recollection of two situations; one in which two men are warily sparring and dancing round each other; and one in which a blow is delivered (you hardly see how) and suddenly they are locked together, jabbing and pommelling and heaving. Then they are separated, and the dancing and pawing recommences. Every now and then there is a dramatic moment which you could not miss though you were far away: a swinging blow and a deft duck and—smack, they are skin to skin, body to body again. Welsh made some wonderful ducks and dives. I remember vividly one passage in which he made a double duck, this side that side, Ritchie's arm going over him twice like Punch's baton over the clown.

The great difference between professional and amateur boxing seemed to me to lie, from a spectacular point of view, in the fact that while amateurs, after giving a blow, step back to get out of danger, with professionals a rush forward is the commonest counter to a return. Sometimes when Ritchie was no doubt intent on some opening, and they were both footing it warily round and round with their arms working, Welsh managed to plant a swift punch in his face. I suppose this would count as a point, but it did not seem to have much effect on Ritchie. Indeed, how the referee decided who had won a particular round puzzled me. One might decide on general grounds that Welsh or Ritchie had had the best of it, and had hit the other man more often; but how far one swinging blow counted against three or four smart punches I could not, in my ignorance of the intricacies of the sport, make out.

Welsh fought in a crouching position, with his head very low; Ritchie with his arms held farther from his body and his gloves often half open. Welsh

nearly always took the offensive. I don't know how risky those head-down rushes of his were. One only saw that whenever Ritchie tried to catch him with an upward blow as he came on, he was always a fraction of a second too late. Would that blow come off next time ? That is what kept me excited, for Welsh was otherwise getting the best of the game. I was near enough to see, but not quick enough to follow, all that happened when they were "fighting in." Welsh was nearly always lower and striking up, and often Ritchie had to content himself with pommelling the back of Welsh's neck. This situation, which was repeated again and again, was thrilling to a spectator near enough to see how much scrooging and hammering went on to maintain what, at a distance, must have seemed a *status quo*. What risks were run when a glove or arm was shifted to get a better opening or to disengage !

The whole spectacle is an exhilarating one : the white square platform with its white ropes under a blazing glare of light, on which these admirable specimens of humanity are perpetually shifting and dodging with steady agility, and beyond them the confused darkness of the crowd with faces set thick as cobble-stones in it. Every now and then a delighted roar breaks out when a blow goes clean home, or is avoided with dramatic dexterity. It is, I suppose, this particular thrill of seeing a smashing blow which humanitarians distrust.

I have myself a strong dislike to vicarious pugnacity—the most enfeebling and commonest of emotions. It does enter into one's enjoyment of a boxing match. There is no doubt about that. But the joy inspired by the exhibition of pluck seems wholly admirable ; and in this world, where things are so inextricably mixed, it is impossible to get the one without the other. After all the satisfaction of

BOXING

seeing a boxer mauled, even if you identify yourself entirely with the stronger (the "sportsman" rejoices when the pluckiest wins), is respectable compared with the quiet pleasure many take at the Law Courts trials where some fellow-creature is often battered out of self-respect and all resemblance to our common humanity.

OLD AGE

READING Volume V of Mr. Buckle's *Life of Benjamin Disraeli* started me thinking about old age.

So far I have never been profoundly alarmed by the prospect of growing old. I was not born with a strong dread of death or of old age. The first book which made the thought of growing old at all alarming to me was *War and Peace*—the epilogue of it. You remember the description of the Rostov family at the end, that family once so gloriously full of life? Then perhaps you remember this description of the Countess Rostov in her old age:

“After the deaths of her son and her husband, that had followed so quickly one on another, she had felt herself a creature accidentally forgotten in this world, with no object and no interest in life. She ate and drank, slept and lay awake, but she did not live. Life gave her no impressions. . . . There was in the highest degree noticeable in her what may be observed in very small children and in very old people. No external aim could be seen in her existence; all that could be seen was the need to exercise her various capacities and impulses. She had to eat, to sleep, to think, to talk, to weep, to get angry, to work, and so on, simply because she had a stomach, a brain, muscles, nerves and spleen. . . . She only talked because she needed to exercise her lungs and her tongue. She cried like a child, because she needed the physical relief of tears, and so on. What for people in their full vigour is a

motive, with her was obviously a pretext. Thus in the morning, especially if she had eaten anything too rich the night before, she sought an occasion for anger and pitched on the first excuse—the deafness of Madame Byelov. . . . Another excuse was her snuff, etc. . . . When she required exercise for her organs of speech—this was usually about seven o'clock, after she had had her after-dinner rest, then the pretext was found in repetition of anecdotes, always the same and always to the same listeners. The old Countess's condition was understood by all the household, though no one ever spoke of it. Only rarely a mournful half-smile passed between Nikolay, Pierre, Natasha, that betrayed their comprehension of her condition. But those glances said something else besides. They said that she had done her work in life already, that she was not all here in what was seen in her now, that they would all be the same. . . . *Memento mori*, said those glances."

And then Tolstoy adds: "Only quite heartless and stupid people and little children failed to understand this, and held themselves aloof from her."

That passage frightened me: "What for people in their full vigour is a motive, with her was obviously a pretext." Now the essence of what is really depressing in modern psychology is the tendency to extend to all ages of life, what Tolstoy, with that compassion of his which is one of the most exquisite things in literature, marked as the characteristic of old age. The tendency of modern psychology, and it is reflected in modern fiction, is to interpret actions and the expression of emotions merely as pretexts for the exercise of physiological functions.

The next book which made the idea of growing old alarming to me was *The Old Wives' Tale*. Arnold Bennett was fundamentally a romantic.

That is to say, his standard of values was not external, he accepted the value given to things by the will as the last word. His favourite character was the miscellaneously - acquisitive, ordinary active man who wants to get on, or wants first this thing and then that ; and the value which gusto transfers to the objects of desire was never criticized by Arnold Bennett. No novelist ever gazed with more mouth-watering, urchin-like naivety into the pastry-cook's window of life. It was the source of his grip upon the imagination of the public.

But there is one element in experience which brings the romantic up short, brings him face to face with a pervasive sense of tragedy (not merely the tragedy of failure to get this or that, a nice house, a nice income, a wife and children)—the fact of old age and death. In the process of time the glow shed by the will slowly fades from things. The reason *The Old Wives' Tale* is Bennett's greatest book is not that he has shown there his powers of description at their best—though he has—but because it has the deepest theme. And in the handling of it he showed himself an artist.

In the first half we follow the adventures of two young sisters, Constance and Sophia. We have followed so breathlessly their divergent careers that we have forgotten how time flies and what it does. We turn a page—at last the sisters meet again ! “They both hesitated, and, as it were, wavered uncertainly towards each other. ‘I should have known you anywhere,’ said Sophia, with apparently careless tranquillity, as she stooped to kiss Constance, raising her veil.” “I should have known you anywhere.” But we should not have known them. They are both old women. Constance is just a cosy, tremulous old body ; the proud Sophia is like a blade of tempered steel after her experience, but there is nothing to cut with it. The once flashy

Scales appears again, a shabby wreck, and only to die. The two sisters have ample means ; they live a little longer. "She was a great body for making the best of things," is Constance's epitaph. It is the young generation's turn next. At that meeting of the two sisters the idea of the book has suddenly crystallized ; the last pages make it certain that all who read will understand

Disraeli would not to the last own to a grey hair, but he fought old age with subtler weapons than dye. It was as a septuagenarian lover that he interested me most. The heart does not so soon grow old, but it is painful to have "to lodge the god in ruins." "Well, at any rate, let the ruins be as picturesque as possible," Disraeli seems to have said to himself, "I will live by the youngest part of me still — the heart — and never be without two Dulcineas."

BOHEMIA

THERE is a great difference of opinion as to where the confines of this country begin. I see the smaller Oxford Dictionary defines a *Bohemian* as "a socially unconventional person of free and easy habits, manners, and sometimes morals (esp. of artists, etc.)." This definition leaves much to be desired. "Especially of artists, etc."; it is precisely the "*et cætera*" one is curious about. Unconventionality alone does not make a *Bohemian*. It was an unconventional thing to invent "ear-stoppers," and to put them on the moment the conversation became trying, yet Herbert Spencer was not a *Bohemian*; the most rigid conventionalist would hesitate to call him that. These ear-stoppers were formed by a band, almost semi-circular in shape, with a little velvet knob at each end, which a spring kept pressed over the ears. The device was unconventional; the effect was comic; but it was too rational and deliberate a proceeding to be the mark of a *Bohemian*. In fact, I shall endeavour to persuade you that it was the reverse. For Bohemianism must be distinguished from mere eccentricity of behaviour. I remember knowing in my early youth a successful Yorkshire manufacturer who exhibited two odd traits, one of which strikes me now as belonging, like Herbert Spencer's ear-stoppers, to the category of ingenious, rational contrivances, and the other to that of pure eccentricity; neither marks him as a *Bohemian*. His case is instructive. At the bottom of his park ran an inky canal, down which coal-barges were

towed all day. A high wall separated his grounds from the tow-path, and along the top of this wall, which was several hundred yards in length, he placed a row of bottles. The bargees could not resist shying coal at them. In fact, it became their regular practice, a sport to which they all looked forward, and on which bets were laid. Periodically the gardener went round to collect the missiles which had fallen on the park side of the wall, and the ingenious proprietor boasted that he kept one small greenhouse going during the year without its costing him a penny.

His eccentricity was to keep open house at midday on cold beef, which he himself cut into slices with extraordinary rapidity, and flung upon the plates of the expectant guests with a dexterous flick of the carving knife. The slices always landed flat on the plates, and, with the exception of the left-hand corner plate at the other end of the table, his aim was unerring; for this shot he had visibly to pull himself together, and sometimes he failed. Out of consideration for the feelings of a possibly touchy guest, this place was always occupied by a member of the family, which was a large one. He had, I think, the makings of a *Bohemian* in him, and yet clearly he was not one. He was merely eccentric and ingenious and unconventional.

The way in which a *Bohemian* differs essentially from other people seems to me to lie, not in laxity of morals, nor in irregularity of habits (for some *Bohemians* have clockwork habits), nor in casual manners (for some are punctilious), but in not possessing a sense that everything ought to serve a particular purpose and no other. The *Bohemian* has no delight in allocation for its own sake. Now the run of mankind takes an almost childish delight in contrivances intended to meet the need of particular occasions; and their object, as the

contents of shop-windows show, is not to make the same things serve many ends, but to have at hand as many things as possible made in such a way that they can only be used on certain definite occasions. The man who is the antithesis to the *Bohemian* is the man who cannot resist a new patent egg-decapitator. He likes his travelling-bag to be constructed in such a way that only a shoe-horn and nothing else will go in a particular place in it. He would, if such a suit could be designed, like to possess one in which the wearer could only go through the motions necessary to golf, and in which it would be quite impossible to shoot or ride. Conventions in dress, dictating a particular costume on particular occasions, delight instead of bothering him. He rejoices to think that he must dress differently for Newmarket and for Ascot. And he treats time and space, as far as he can, in the same way. He likes to arrange his day so that it is difficult to do anything except certain kinds of things at certain hours; his house so that each room is used only for certain purposes, and each part of each room so that it becomes more fitted for one purpose than any other. His dining-room will be a room in which it is almost impossible to sit comfortably, except round the table; his drawing-room one in which it would be difficult to concentrate upon work, with a corner of it especially suitable for afternoon tea. On the other hand, the note of the *Bohemian's* house is that any room and anything in it may be used for any purpose as occasion arises, from the dining-room table as a writing-table, to paper-clips as studs, or tooth-brushes as window-wedges. He *prefers* to use his ulster as a dressing-gown, whereas his opposite would like an excuse for having three dressing-gowns, each for a different stage in his toilet. The *Bohemian* does not scorn to use an old hat-box as a

waste-paper-basket ; and, although his way of life does not conduce to order like his opposite's, it is a mistake to conclude that the one loves order and the other does not. The real difference between them is that the one gets an exquisite satisfaction from thinking that everything round him serves a definite purpose, and is amused by forestalling the minute contingencies of life ; while the other is bored by preparing for them, and the purpose things serve is by no means the most interesting quality they possess for him. To the former, the charm of thinking about the hours ahead of him is that each one is ear-marked ; to the latter, that they are all empty and can be filled with anything. *Æsthetic* people are not most interested in the purpose for which things are made, but in their appearance, or the suggestions they may carry for their imagination ; they therefore tend to be "*Bohemian*."

The question, what are the signs by which a traveller may know that he has crossed the borders of *Bohemia*, is difficult to define. The frontier begins at different places for different people. To me it is marked by a house at which one might find any afternoon the master shaving at three o'clock by the drawing-room looking-glass ; but to some people such a sight would suggest that they must be nearing the capital. It depends upon previous experience. But if you wish to find out whether or not you are likely to be at home and comfortable anywhere throughout its dominions (this is a practical question often requiring decision), call up to yourself the vision of someone buttering bread with a perfectly clean razor : if the idea sends a shudder through you, you may conclude you will be happier in other social latitudes ; but if you can envisage it with equanimity, you may, if you choose, make *Bohemia* your home. As everybody knows,

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it has as an abode many advantages as well as drawbacks, and having passed this test you may be confident that its drawbacks will not prove serious ones for you.

WORRY

I WISH one of those people who find time to write to me correcting my statements, sometimes sweetly, sometimes with a galling air of triumph, would come to the rescue of my ignorance now. I want to know the title and the author of some verses, but the indications I can give are scanty. They are comic verses; they are certainly not by an author of repute—I should think they were by someone whom no literary man would call a literary man. They have a refrain, “And he worried about it.” You remember Socrates’ contempt for knowledge which did not, and could not, help a man to live well and choose the better road in life? These verses are Socratic.

Such contempt for the fruit of disinterested curiosity, for science and erudition, is common to philosophers with a strong ethical bent, and also to cheerful practical philistines of all sorts. Dr. Johnson felt contempt towards science (“A man who grows great in electrifying a bottle!”); though with that imposing and trenchant unfairness which at once attracts and repels us in him, he smiled upon scholarship. No doubt, if pressed, he would have admitted erudition to be also frivolous: still, its pursuit was a highly respectable way of spending time without sin—and that was the great thing. In Bernard Shaw we see (I hope many of us with regret) a similar tendency to pooh-pooh science. He plumps for imaginative intuition as against observation and the accumulation of facts, for genius against detachment. He shocked

me once by exclaiming in a lecture that no man without imagination ought to be allowed to look through a microscope; while I felt, on the contrary, that the only type of man I could trust to tell me what he saw would be precisely the one Mr. Shaw would debar. But I am forgetting those verses about which I want information. To give a further clue to identifying them, I will recall the circumstances in which I heard them repeated.

It was a village entertainment, the performers were school-children; I was staying with the squire. Though he had merits rather rare in squires—for instance, if he did make friends with one of his dependents, in talk with him he ceased to be the squire—he was extremely lazy and indifferent about the duties of his position. I knew him well. The most persuasive wild horse could not drag him out on a winter's evening to a stuffy school-room, smelling of warm parents and children, to listen to hapless little turns, songs, recitations. His refusal would be partly due to downright selfishness, partly to an abhorrence of pretence. Nothing would induce him to pose as the benevolent patron of the village when he did not care a damn whether the children acquitted themselves to the credit of the school-mistress and vicar or not. He had no objection to over-riding or trampling on the poor; but patronizing them, even when a little patronizing geniality would have been most welcome, was impossible to him. Now, I took a simpler, a hedonistic view of such situations. I saw in the mind's eye the decorated and beflagged school-room; the empty row of chairs in front reserved for the party from "the great house"; the dumb village audience, the hesitation to begin. I heard in the mind's ear the whispered consultations: "Shall we begin? Better wait. They are sure to come. . . . Seems they

are not coming"—and I imagined, at least in some hearts, a sense of flatness. It is always slightly depressing to begin one's performance with the impression that it is not considered important (I have experienced this when lecturing), though one gets over it, while an element of augustness in an audience adds a fearful joy stimulating to performers. In short, when the squire refused to budge I said that at any rate some of us *must* go. We did ; and I had my reward. In the course of an entertainment marked by that wooden inability on the part of the performers to make the best of themselves which is the subtle charm of childhood, a little girl in a bright sash got up and recited the poem with the refrain, "And he worried about it."

The story which the verses told was that of a man who might have been quite happy at home, only he had worse cares than any which his wife could succeed in overcoming. He was not the slightest use in the house, for he had been reading in history about the fearful misfortunes which had overtaken mankind in the past—and he worried about it ; he had read in the papers about floods in China, earthquakes in South America, famines in India—and he worried about it ; worse still, he had read in scientific books how in trillions of years the earth would inevitably grow colder and mankind would be frozen out—and he worried about it. Through the mechanical sing-song of the shrill unmodulated little voice, there rang, whenever she came to the refrain, a genuine and comical surprise. She converted me on the spot to her careless philosophy. I have had backslidings, but on the whole I have followed her pretty well.

Had I not, probably M. Maeterlinck's book, *La Vie des Termites*, would have depressed me. I should have "worried about it." As it is, I can mark

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with equanimity where pessimism seems fair, and where it seems unduly deepened.

After all, one reads such books for information, to satisfy curiosity. If one reads them with a mind bristling with terror, it is better not to read them at all: books about insect life do not suggest an amiable aspect of the *Anima Mundi*. In this account of the so-called white ants (they really take colour from the soil in which they live) there is much that reminds us of human destiny. They have had to solve the same sort of problems; being feeble, unweaponed and unprotected, they have brought community life to high and terrible perfection.

But I shall not worry about it.

SUFFRAGETTES

THEY were stirring days—the days of the Suffragettes. No one knew what they would be up to next. The crash of plate-glass shop-windows became a familiar sound; the sight of a dishevelled woman, half-carried, half-pushed along between two policemen, tugging and biting in an anguish of exultation and disgust, became a familiar sight. In the gutters of the streets all day long, wet or fine, stood shy girls, selling, in a kind of rapt miserable patience, propagandist literature; on boxes at the entrance of quiet squares, in the parks, bolder spirits were describing to blank-faced or jeering crowds the horrors of forcible feeding, the torture of “the cat-and-mouse Act.” One morning we would read that Mr. Birrell had been felled by five amazons in St. James’s Park; the next, that Mr. Asquith had narrowly escaped being torn to pieces on some distant golf-links, or badly scratched at a Foreign Office party. Interrupted meetings, well- or ill-aimed brickbats, blazing houses, damage to property and to male politicians of all sorts—the changes were rung on every variety of public nuisance, from the trivial to the dangerous. Once, pouring from four furniture-vans, like Greeks from out the belly of the Trojan Horse, a little female band actually succeeded, in spite of a regiment of police, horse and foot, in invading the precincts of Parliament. The lobbies of the citadel rang with the shriek of whistles (in those days and in such places as ominous a sound as air-raid signals), when the scene, still classical, turned

into the Rape of the Sabines. Brawny policemen clasped struggling matrons and maids, bore them away, and set them down like dolls outside the gates. The prisons were full; the tongues of even the most indefatigably-sermonizing magistrates were worn to stumps; the authorities were at their wits' end, nor had it taken them long to get there. The Hunger Strike was winning. Authority had only one weapon left. It could only pump soup up the noses of women into their lungs and stomachs; not a pretty form of torture. The object of the police was to arrest as few raiders as possible; they set these down and told them to go home. The women flung themselves again at the large blue men, battered and swore and scratched—till martyrdom was secured.

They had two weapons; the power to make themselves an intolerable nuisance, and a hunger for martyrdom; martyrdom was the most effective, the most precious weapon. The funds behind the movement were inexhaustible. The campaign was a costly one, but the Suffragette coffers were never empty; they were fed from the most unexpected sources. Quiet old maids who had been content to save for a favourite nephew, or whose public spirit had taken the form of supporting a home for lost dogs, or financing a society for prolonging the close season for lobsters, recklessly contributed far more than their savings. The nondescript women one sees in hotels, turning wearily the pages of out-of-date magazines, sent cheques and curtailed their visits to Bexhill or Torquay. And, more disconcerting, the cry "The Vote, the Vote!" appealed equally to the daughters and wives of men who flattered themselves they had allowed their womenfolk perfect freedom. Something had come between them and a daughter whose education they had inched and pinched

to secure, between them and wives who were invariably allowed to decide every question of domestic importance.

One Derby Day, as the horses were coming into the straight, a woman ducked under the railings and flung herself before them. She had mistimed her plunge ; the group of leading horses had already passed her, and she was struck by one which was out of the running. She was instantly killed. This " futile " and heroic demonstration roused a great deal of feeling. It was tantamount to a threat to the male population that not only orderly political life in this country would be destroyed, but their favourite pleasures would be in constant jeopardy until this matter of " The Vote " was settled.

Some days later a long funeral procession wound its way slowly across London from station to station with bands and banners. I struck it in Shaftesbury Avenue and walked beside it to St. Pancras, solemnified by the dull thump of the drums and the wail of the fifes. What thousands of women ! What different types ! Old and young, dowdy and smart, dignified and slatternly, intellectual, obviously public-spirited, haplessly the reverse, wearing the badges of the militants, wearing the ribbons of the constitutional women's movement, wearing the ribbons of everyday finery eked out with mourning. . . . I am ashamed to say I have forgotten the name of the devoted suicide in the long black box, though I paid her then the homage of tears. " We are weak, we are weak," wailed the fifes ; " We are strong, we are strong," thumped the drums. Thousands of women, and such different kinds of women ! I became conscious of the vast surge behind this rackety, screaming movement. What a heterogeneous collection of motives, disappointments,

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grievances, humiliations, blunders, had contributed to it and massed these thousands of women together. The vote was a symbol.

IN GERMANY

SOMETIMES I am transported backwards on the Time Machine against my will. It happened recently while I was trying to read an American translation of Wedekind's plays (*Tragedies of Sex*). Had this translation not irked me I should not now be reviewing memories ; I should be reviewing a book. But its lamentable diction implanted in the text so many false tones that I took refuge in recalling the first time I saw a Wedekind play. That play was the *Erd-Geist*. I saw it so long ago that even in Germany very few had then heard the name of Wedekind.

In my youth I was sent for a term to Leipzig University, in the hope that I should acquire there a thorough knowledge of the German language. Leipzig University was not at all my idea of a University. I found myself homesick and at large in a great town, though at the same time, rather gratifyingly, a rich independent man—the possessor of fine apartments for which I paid the modest sum of 35s. a month. I soon collected a following of needy students, who had discovered that I could afford to be prodigal to the extent of a few guineas. But where was the University ? To me it was a brass plate and Herr Professor Wundt. True, there were the student-members of the corps, who wore white caps, with different-coloured ribbons round them, between crown and peak. These crop-headed, shaven young men lounged round the town in packs, with sticks and canes, drank beer together in the same restaurants, sang

songs together, and occasionally went off to the neighbouring town of Halle to fight. (Duels were not allowed in the University itself.) From there they returned, their faces criss-crossed with sticking-plaster. I refused to join a corps; the offer came too late; I had already chosen my companions, and they were all social pariahs—musical German Jews, out-at-elbow students, who could not be admitted. But these were faithful to me, and from them I learnt something of the Art of Sponging—perhaps the most valuable accomplishment I brought back with me to England.

Most people are mere duffers at sponging, because, poor things, they have never been in the position to be sponged upon; they make mistakes because they do not know what it feels like to be a Spongee. They do not understand, for instance, that sigh of slight depression which arises, not from the breast of stinginess, but merely from the monotony of its being always taken for granted, night after night, week after week, month after month, that the rich man will pay. They do not comprehend that it is not only their desire, but also his desire, to forget, as far as possible, this slightly vexatious circumstance; and, therefore, that to leap forward with alacrity to pay a penny-ha'penny tram-fare, when on arrival at the theatre the Spongee will of course be left to take all the tickets, is not tactful on the part of the Sponge, but calculated to make the Spongee murmur: "This, at any rate, is not the moment for a display of rugged independence."

I learnt a lot of little things like that from my faithful, tag-rag tail. I learnt too the meagreness of the rewards of opulence. When my followers were courting, it was I who bought large inexpensive bouquets; when the courting was successful, it was I who paid for small inexpensive opal rings or

bright parasols. Thus I knew what it was to have my shoulder frequently patted, to be stroked and told repeatedly that I was a *famoser Kerl*, a *liebesswürdiger Mensch*, a *prächtige Natur*; and thus I, too, experienced for a brief period all the malease and dubious satisfactions of the rich.

The Leipzig concerts were, of course, magnificent, but the State Theatre performances were of a heart-damping banality, and were spiritlessly acted. After a few experiments I was easily persuaded to abandon them, and our favourite haunt became a long drill-hall with a stage at one end of it. You could sit there, at little round tables, drinking beer during the performance. It was not under control, though there was always a Schutzmann present, in case anything rude should be said about the Kaiser; and there unlicensed plays could be performed. One evening, before the curtain went up, a bewigged, heavy-eyebrowed man in a crimson satin jacket and limp thigh-boots, with a revolver in one hand and a whip in the other, made a rather ridiculously emphatic appearance in front of it. He began a tirade in verse which I could hardly follow, though it was clear to me the speaker was in a state of contemptuous, wrought-up fury. He hurled his lines straight at our noses as though he hoped they would break them, cracking his whip at intervals and once making everyone jump by firing his revolver over our heads. It was Wedekind himself, taking round the *Erd-Geist*, then only a little side-show wherever he set it up. At Leipzig his audiences were thin indeed—never more than thirty or forty people in the long, grey room, I think. I went, I remember, myself to three out of the four performances. The *Erd-Geist* had fascinated me. It could not be said, however, that these small audiences were indifferent, since the closing act was invariably received with loud hisses; a gander-

like demonstration which prompted me at last to send round a note in school-boy German expressing my strong approval of the play; and that led to Wedekind and I drinking a silent glass of beer together, nodding at each other over it.

Why did the *Erd-Geist* fascinate me? I was certainly not experienced enough to see what a dramatic innovation it was. Perhaps "Lulu" herself had something to do with it—Lulu, "the snake" in this menagerie of wild animals (Wedekind insisted that *his* characters were real wild animals, not tame ones like those in other dramas) who poisons, seduces and kills with unaffected serenity. Lulu was acted by a little blonde with a disturbing apathy in every movement, and a "soft unchristened smile" such as I have never seen in an actress since. (I believe she afterwards became famous.) Perhaps I was also fascinated because the play, though mystifying, was at the same time easy for a foreigner to follow: twenty minutes of excited, concentrated dialogue, then—Bang!—a death in a fit, or a suicide, or a murder. A curious combination of crude, energetic realism and of poetic disregard of literal truth, ran through it all. Long afterwards some of Van Gogh's pictures gave me the same sensation. If I had only had my wits about me then, or dreamt I should ever be interested in drama, I might, as long ago as the beginning of the century, have been the harbinger of "Expressionism" to these shores.

DURING THE WAR

AUGUST 4TH 1914

NATURE, I believe, meant me to be a special reporter, but she forgot to endow me with the knack of being "on the spot." But sometimes so much worth noticing is going on everywhere that it matters little where you are. The night of August 4th was such an occasion. It does not disqualify me as a reporter that I was not in the pushing, yelling, chaffing crowds which thronged the Horse Guards or in the cheering ones outside the House of Commons.

I met at two in the morning, in the far and quiet West, and in a clean, lit, empty, residential street, an old, eager, one-eyed vendor of papers with a Union Jack in his billy-cock. A tattered bill fluttered before him as he shuffled wearily and hurriedly forward. "Thrippence. Thrippence. Declaration of War." He was trying to shout, but he only achieved a quinsied whisper. I stopped and bought. "It's not in it," he added, confidentially, pocketing my coppers, "but it's true : God's truth it is—I couldn't get the latest. I was an hour and a quarter getting through the crowd." I looked at him and felt as if I had been in that crowd myself, and could describe it, too. "If Mr. Disraeli was alive!" he croaked huskily. After this unexpected comment he lunged on again with bent knees, leaving me under the street lamp staring at the columns of the new, but already familiar, heavily-leaded type.

Though the region where I parted from my friends was fairly well known to me, I had lost my

way, and after walking about half an hour I had come out somewhere below Holland Park. How late the 'buses were running! And the taxis were buzzing one after the other down the main thoroughfare, as if it had been ten o'clock and not two in the morning. This reminded me of public injunctions, already emphatic, concerning economy in petrol. But economy was impossible to-night; night of good-byes, of intimacies and friendships huddled into climaxes; night of sociable, equalizing forebodings; night ominous to the solitary, but gay, positively gay, to the gregarious.

I had noticed on my late ramblings and strayings that "good-nights" from passing strangers had been frequent, and that they had had a different ring. People seemed to like being stopped and asked for a match or to point out the way; their eyes were more alive, less preoccupied, more conscious of one. When I joined a group round a coffee-stall to drink a cup of hot slop, I did not feel that customary embarrassment at not being suitably dressed. The silence round me was more friendly; some sort of barrier was down; no one asked me for money. Beside me as I drank stood one of those little, odd, undersized fly-by-nights, her grubby hands resting side by side on the oilcloth of the counter. She looked up under her feathers and smiled. It was not the usual smile.

As I crossed, striking southwards, some idea—what was it?—began to peep through these impressions.

A taxi packed with people waving flags whizzed by, down the now empty road. A girl in a pink jersey and a man, sitting on the half-open roof, set up a long hooting screech as they passed: I felt I had sampled the patriotic enthusiasms of Piccadilly Circus. What luck! How depressed I

should have been in the midst of them ! There is nothing so heart-damping as being out of sympathy with a crowd.

In a road of modest villas (it was quiet and dark) I passed first one and then another waiting taxi . . . close on three o'clock, and in this region of prudent living ! Suddenly behind some acacias shivering in the night air a door opened. A woman ran quickly down the steps, waving back at a man who was standing in the lighted oblong, signalling and nodding agitated encouragement. In she sprang, flinging herself back with that rapid pre-occupied movement which is equivalent to exclaiming, "This is life !" This hectic communal excitement, which overlay gloom and foreboding, which was expressing itself here in intimate ways and elsewhere in confused uproar—my peeping idea had something to do with that.

I had not come up against those blatant manifestations of it, that swaggering contempt for suffering which suggests such an ignominious combination of cowardice, stupidity, and cruelty. Clearly the great majority (unless they feared too much for themselves or those nearest them) loved war. There was exhilaration abroad to-night, but beneath lay forebodings of dreadful days, and deeper still a dumb resentment at the cold-blooded idiocy of diplomacy. Yet, there it was—and it was a kind of happiness. Why did a declaration of war make people unusually happy ? Was it only love of excitement ? Where exaltation roared and romped and streamed along the streets, it seemed it might be so ; but where I had surprised it, in quieter eddies, there seemed to be another element involved. I caught the idea which had been peeping at me, and the irony of it was enough to make one cry : people seldom experience so genuinely that sense that life is worth living, which a feeling of brotherhood

gives, as when they are banded together to kill their fellow-men ; they are never so conscious of the humanity of others as when they are out, sharing risks, to smash the self-respect and mutilate the bodies of those who, but for a few politicians, might just as easily have been hoping with them, dying with them side by side.

Earlier in the night I had seen a party of French recruits doubling through the streets, singing. Everybody had hailed them as they went by. Coming towards me now under the lamps was a man in spectacles, with a small straw hat perched on his big square head. He looked Teutonic. "Gute Nacht," I said, as we passed. He stopped for a second and wrung his hands : "Ach Gott, Ach Gott ! Mein lieber Freund !"

HOW THEY TALK

“THERE’S no doubt about its effect on *me*,” said the literary man; “I’m done for.”

“Oh, nonsense!” someone murmured sympathetically.

“Can’t you write about the War?” said the cheerful person. “I’m sure you could.”

“I can’t think of anything else, but I can’t write about it. That’s the form in which I pay my quota to the general uneasiness and depression.”

“I must say, then,” said the business man, “you get off pretty cheap. I beg your pardon,” he added hastily, “I was forgetting you wrote for a living.”

“I had forgotten. For the moment I wasn’t thinking of that,” replied the literary man, sighing and knocking out his pipe. “The fact is, since the War began my mind has been like a dog on a chain, a dog which is used to scampering about. I feel useless, too—a fly on the fifth wheel of the coach; and then once or twice every hour of the day I say to myself, ‘Think what I am missing! What I’m *missing*’!”

“Ah, I felt like that,” said the cheerful person, “till I joined the Special Constabulary.” This remark was followed by silence. Then he went on: “Art and Literature can’t stop, you know.”

“Can’t they?” suddenly snapped a thin man with vivid eyes and a cramped, energetic face. Hitherto his contribution to the discussion upon the

effects of the War had been to declare that, so far as he was concerned, it had made the conversation of all his friends intolerable. "I always suspected before I despised the way even decent people felt about war," he had added, glaring miserably from one face to another. Now he kept on repeating, "Can't they? Can't they?" leaning forward and beating his knees rapidly with his hands.

"Look at the pacifist," said the business man, smiling slowly. "He's got more of the wild cat in him than any of us. Would pussy like a saucer of warm blood?"

"You don't know what you are talking about." The little man turned on him with such ferocity of disgust that, though no one had moved, each felt as though he had suddenly sat bolt upright in his chair. "Perhaps," he went on, controlling his voice and looking down, "perhaps what you say about me is true. That's why I understand, and you *don't*, what war is really like."

"I wish you'd tell me what it is like," said the literary man, "if you do know."

"If there was the slightest chance of your understanding, you wouldn't ask. The fact is, men like you do not know the joy of killing, so though you understand in a general sort of way that thousands of people suffer in war and believe in its atrocities—at least in those committed by the enemy, yet the inward reality, the horror of—of—of everything, the sense of *how* these things happen, is hidden from you. They are not *real* to you. Consequently, war to you is simply a drama of courage and endurance against a background of pain and death, vague as the sufferings in a cancer ward. At the same time it is all a sort of glorious game of chess—you don't realize what hell it is for those concerned who don't go half-frantic mad, and in another way for those who do.

HOW THEY TALK

Naturally," he concluded contemptuously, "you and ninety per cent of the stay-at-homes like war."

"Look here," said the business man, "if you think a battle can be won by men who go frantic mad, you're very much mistaken."

"I must say it gives one a jolly sort of feeling to think of men bearing all that kind of thing," said the cheerful man.

"What about the good-humour of men under fire," asked the literary man, "the shouts of 'Are we down-hearted?' and the willingness of each man to go one better in taking risks and helping?"

"The good-humour and jokes make it all horribly madder," said the pacifist.

"Do you mean to say you think that under no circumstances a man ought to control his nerves? If so, how on earth is the work of the world to get done?" said the business man.

"It's a question of what you shut your eyes to, and of feeling things in proportion. Nothing is worth the sufferings of war—not even the courage to bear them."

"Everybody has got to die some time," said the cheerful man.

His remark again produced silence. It was broken by one who had not as yet taken any part in the discussion. "What strikes me is that all this time our soldiers are dying for us, we are arguing about their states of mind. Isn't it . . . ?"

"That's what I feel," exclaimed the literary man.

"It's not so much the men at the front as those at home who strike me as detestable," said the pacifist.

"Oh, then, it's not fighting, but *watching* fighting you are talking about!" said the business man.

"It is the onlookers who make the wars," said the pacifist.

"I thought you people always said it was the armament-makers. Though you're glad enough now," the business man went on, with a provocative chuckle, "that we've got a strong navy—or you ought to be."

"If Grey . . ." began the pacifist.

"If the Kaiser, swanking ass . . ."

"If civilization is to . . ."

The temperature had suddenly risen. Each man felt an angry contempt for the other.

"You don't mean to tell me you want the Germans to win?" shouted the business man.

"No," said the pacifist.

"What I can't understand in you fellows is that you won't let yourselves be natural and glad, like decent people, at good news."

"Victory is just as horrible."

"You've no guts, then. Have you no feelings for England? Germany *must* be smashed."

"There is no such thing as 'England' or 'Germany'," said the pacifist, "Only Englishmen and Germans. They're men like us."

"What, those brutes?" said the cheerful man.

"Do you mean to say you believe all those filthy stories?"

"Yes, don't you?"

"I thought war atrocities were all you *did* believe in," said the literary man.

"I don't believe they're all on one side. And I hate and despise the spirit which makes public men speak of the German sailors as cowardly 'rats' who have to be prodded out to fight. Our journalists always say of German soldiers that 'they advanced as usual with blind, stupid brutality.' If it had been a British charge, they would

have described it as the coolest feat of arms in military history. And then the gloating over 'mowed down in thousands'! Horrible, mean, stupid—stupid! Think of it! Fine men with photographs of their children wrapped up in oilskin rags in their pockets, and . . . ”

“I don't suppose the Navy approved of the First Lord's saying that their enemies were cowardly rats,” said the silent man. “The military dispatches are not like the papers, are they? And I haven't noticed much of that spirit in the letters printed from men at the front.”

“Hardly was Winston Churchill's speech out of his mouth before the German fleet *did* make a sally,” said the pacifist, ignoring the interruption.

“You don't mean to say you're *glad* our ships were sunk?” several shouted together.

“I never said I was.”

“You showed it.”

“I didn't.”

“I won't be in the room with a fellow who dares to rejoice at our disasters.”

“I think I shall enlist,” said the silent man, getting up. “I expect there is more decent human feeling at the front than anywhere else in Europe just now.”

NIETZSCHE AND THE WAR

October 10th 1914

DURING the first few weeks of the War Nietzsche's name was bandied about in the Press a good deal. He was frequently mentioned in connection with stories of German brutality. Anyone who had not read him would have thought from these references that his writings were incitements to cruelty and stimulants to domineering megalomania, and that his works were the inspiration of every harsh, swaggering German patriot and every merciless Prussian soldier. This was a silly mistake. In the first place Pan-Germanism is not the note of Nietzsche's writings; he is the bitterest critic of German culture, a more bitter one even than Heine. It is true that in his mouth the adjective "German" is not such a violent term of abuse as the word "English," but it connotes contempt. The word "English" in his vocabulary stood in the region of practice for the commercial spirit which writers like Carlyle, Ruskin and many modern Socialists have inveighed against; in the region of thought and feeling for the spirit of compromise, timidity, and a belief that humdrum safe happiness is the only thing worth living for. Nietzsche regarded the utilitarian philosophy as the most characteristic of England's contributions to the world's stock of ideas, and the attempts of the English philosophers to botch up a comfortable reconciliation between "egoism and altruism" made him sick. A moral Tartuffism—cant—he thought, was our national vice; and if one is going to bring general indictments

against nations, I suppose that old one *is* the most plausible which can be brought against us, just as stinginess and histrionic emotionalism are the obvious faults of the French, and a romantic egotistic density and a follow-my-leader sheepishness the German ones. Nietzsche hated us because he thought us an unphilosophical race—and so, according to his idea of what philosophy should be, we are.

Philosophy was not to him an unusually obstinate attempt to think correctly, but an adventure of the soul. He did his thinking from the artist's point of view, from the ground of mere feeling. It was absolutely necessary to him to attain an exciting, picturesque view of the world; and the very idea that anybody might pull him up and say, "Yes, yes, but is it *true*?" made him lash out furiously in anticipation. The respect for truth for its own sake he dubbed a sort of survival of Mumbo-Jumbo worship. And if you defended the instinct to respect truth on the plea that after all to know it is the condition of walking sure-footedly in this world, he flew at you on moral grounds. "What! you want to walk sure-footedly, do you, you miserable, life-diminishing mediocrity? Don't you understand that tight-rope dancing is the emblem of the noble life, and that you must live from moment to moment *dangerously* to be worth anything? My only difficulty as a philosopher is to pile up the panorama of tragedy, all the cruelties of existence—till exhilaration-pitch is reached at last. I have been blessed myself, having also Hell's phantoms inside me, internal enemies to dominate. Thus I could feel myself to be an ecstatic victor, and wrench at last triumphant joys through the bars of my own sickness and weakness—joys with which your notions of happiness, poor, sleek, smug creatures, cannot compare! Have I not written that

you must carry a chaos inside you to give birth to a dancing star?" That is the way Nietzsche harangued us.

But even more than the humdrum common-sensible man he hated the saint, and it is easy to see how he came to do so. The saint is a man who gets along marvellously without feeling himself superior to the universe. The spectacle of a man who accepts destiny, and the tasks it imposes on him—even his own weakness—in a spirit of unshakable acquiescence, was a challenge to Nietzsche's whole philosophy. The saint can't be frightened either into personal cowardice or into a state of blazing egotistic valour; that kind of superb hurraing anger seems to him a small cramped feeling compared with that which can be attained by going out to meet life and opening your arms to humanity. Now if there really was anything in the saint's way of taking life, Nietzsche's philosophy was scuttled. He had to explain the saint away—and he did it very cleverly.

He declared that the saint lived by a sour-grapes philosophy, invented by the particularly feeble and unpleasant and timorous, in order to get even in the long run with the bold, the handsome, and the intelligent; and to persuade them to let off easily those who were too spiritless and ricketty to hold their own. There are a great many "good" people whom this criticism exposes; but it does not rid Nietzsche of his real adversary.

It is all very well to assert that humility is a kind of sneaking, unlovely self-assertion, that self-forgetfulness is a quality peculiar to people whose selves are so unpleasant that they cannot contemplate them without pain, that pity is a fellow-feeling between the unfit, and that the only reason anyone turns the other cheek is that he is too puny to hit back;—it is all very well saying that kind of thing,

and it makes salutary reading for many, but it does not strike at the saint. It leaves quite unexplained the spectacle of a man who, without bothering his head whether or not he is bolder, handsomer, stronger and more intelligent than other people, yet goes his way as unafraid as Nietzsche himself,—and seems into the bargain a much happier man—which is a good *symptom*, at any rate, a kind of guarantee of reserve force somewhere. Nietzsche, like Carlyle, was a tremendous æsthete who mistook himself for a profound moralist. He precipitated himself on certain kinds of beauty in human nature and in the history of man, and became infatuated, not only with them, but with the conditions which made them conspicuous; though these were not admirable at all. The bonfire of beautiful, flaring, pitiless courage at which he invited poor shivering humanity to warm their hands blazes best in a world which is as poisonous, tangled and dank as a tropical forest. But the advantage the saint has over Nietzsche's heroes is that while being quite as little terrified in such a forest, he is fitted also for a much better country. He does not "shine only in the dark." He is just as free from inner restraints as those graspers and dominators, who have fascinated men by exhibiting the energy which springs from will and conscience pulling together.

The antagonism between the saintly and the warrior ideal is written all over literature, and in some mild form it takes place in everybody's private history. And at certain periods a whole generation will incline to one or other of them. The Germans, we are told, have for years past been fascinated by the ideal of a nation under arms, looking only for qualities in their leaders before which it is possible to grovel. Personally, I doubt the diagnosis; but if it is more or less true, it is conceivable that Nietzsche's writings may have contributed to

encouraging in them an upward-gazing admiration for beaked and clawed humanity. But he is much too critical to be acceptable to more or less beaked and taloned personages themselves. He had not an ounce of exclusive patriotism in him. It was the idea of the aggrandisement of individuals not of nations that appealed to him, and it was to a race of "good Europeans" that he looked forward. True, they were rather Prussian those "good Europeans"—more Prussian than he imagined—a spiked helmet would have become their cast of countenance; but he did not believe they were particularly thick on the ground in Central Europe. This is how he wrote of his countrymen: "When the Germans began to become interesting to the other nations of Europe—it is not too long ago—it took place owing to a culture which they now no longer possess, which, in fact, they have shaken off with passionate eagerness, as if it had been a disease; and yet they have known of nothing better to exchange for it than political and national insanity."

WITH THE RED CROSS 1914-15

THE straw palliasses on which we Red Cross men slept had been stacked into sofas for the day and covered with rugs: and I, with a brush borrowed from the nuns below, had finished sweeping a room in a small convent near Ypres, the long low room in which a varying fifteen to twenty of us ate, slept, cooked, washed, smoked, shaved, sang, read, talked, mooned, joked, argued, warmed ourselves, dried our clothes, rested, and, in fact, had our being, when an accumulation of scrap-iron in the corner of it caught my eye. I had promptly popped these bits on the top of the overflowing box of sweepings, bones, tea-leaves, paper, straw, cigarette-ends, and potato-peelings, thinking as I did so, "Lucky, just what I wanted, to keep this muck from flying in my face in the wind outside," when I was arrested by an indignant shout: "Hi! look what MacCarthy is doing! He's gone and thrown all the souvenirs into the dust-bin!"

They were, indeed, fragments of shell and bomb, squashed bullets, etc., objects with associations. Of course, I picked them out again; had I not coveted a spiked helmet myself? But to me a bit of rusty iron was a bit of rusty iron and nothing more, even though it should be the fragment of a shell I had seen burst. Indeed, it would have had to hit me before it could have gathered

importance in my eyes. But, free from souvenir-mania in this form, I had it in another as badly as anybody. And although my luggage was not heavy with scrap-iron on my return home, my memory was filled with fragments of events. It is these scraps I have set out for inspection; dusting, polishing, and arranging them to what advantage I can, though not without a misgiving that many will seem to others as inconsiderable as those iron souvenirs seemed to me.

To go out strung-up to endure hardships, to risk his life if necessary, and then to find himself loafing about hotels—that is the first trial of a Red Cross man, and it is not easy to support; even regular meals may in certain circumstances become a burden grievous to be borne. Imagine the rueful glances he casts at his rolled-up sleeping bag as night after night he retires to an hotel bedroom; imagine the irony with which his concentrated food-tablets and emergency appliances confront him on the mantelpiece after a day spent in eating, smoking, chatting and pottering round! No, waiting about is a trial not easy to bear. It is small wonder if someone who left home actually feeling perhaps something of a hero gets restive and edgy under it.

Boulogne was full of Red Cross men more or less in this state when we arrived. The garages were crammed, and along the quays stood rows of ambulances apparently doing nothing. The town was crowded with their owners, drivers and orderlies, many suffering from impatience and irked by the feeling that they had somehow left home under false pretences. Many had been there for weeks (I am speaking now of the middle of October), walking the streets, saluting and saluted, dressed in the garb of soldiers, sipping liqueurs

in hotel courtyards, over-smoking, over-talking, scrambling for the English papers, treating nurses to tea or chocolate in the pastry-shops, squabbling, gossiping, damning their own organizers, or laying the blame on the R.A.M.C.—and receiving by every post admiring and anxious letters from home.

I was more fortunate than most. Belonging to a section of the Red Cross attached to the French Army, I got off from Boulogne after three days. But these days were enough to enable me to understand how hard it is to believe that they also serve who only lounge about and wait, and to convince me that those who are incapable of believing this had better not volunteer their services at all. The inevitable intermittence of the work made patience perhaps the most important qualification of all. "Can you stand being bored without getting peevish or slack?" was one of the questions which should have been put to all Red Cross candidates.

It was a fine house, the Mayor informed me, giving me my billet, but empty; there would be a bed, certainly, and I could get the woman from next door to make the bed. I went off with my slip of paper to get the key and arrange about the servant.

It was a fairly big house, very bare and cold, with a dishevelled garden at the back; but it was not quite empty. Sure enough, one room had a bed and a washing-stand in it. Its two large curtainless windows looked out to the back. And there I waited in the dusk for the woman to come as I had arranged. Now if you have a tendency to home-sickness, nothing is more likely to bring on an attack than looking at a damp, deserted garden after sunset; and there is nothing like home-sickness for making you feel you are not up to your job. I began to have misgivings. I had seen that afternoon some ambulances of

the *Service de Santé* drive up to a hospital and discharge their loads. I had seen the canvas curtain at the back of the car pulled apart for the first time, revealing six pairs of muddy boots upright on their heels. Even those heavy-nailed, motionless boot-soles had given me a slight qualm, and as one by one the stretchers were slowly pulled out, it was with a most uncomfortable curiosity that I had watched in each case to see where the bloody bandage would come, hoping it would not be across the stomach or the face. When that look of apprehension which often floats across the features of a wounded man while he is being lowered, has passed, and he lies on the ground at your feet, that first impression, given by those boot-soles, of an extraordinary passivity is renewed. Looking down at him as he lies on his back, his eyes, if they are open, seem to say, "Do with me now what you will." Then two *brancardiers* pick him up, and with stooping shoulders, knees slightly bent, and short steps, they carry him in. One of the surgeons had invited me to come round later in the afternoon and go through the wards, and, if I liked, to watch an operation. Thinking that the sooner I plunged the better, I had accepted; and it was the recollection of having nevertheless turned tail at the last moment when I heard on the landing of the hospital a curious tapering, whinnying cry—it was this recollection which was making me now, as I waited by the window in the dusk, afraid I should not be up to my job.

I began to reflect on that sympathy of the nerves which incapacitates people from being of any use. It was certainly a sensation which anyone in my position must get under at once; but had such sympathy in a general way any value? Some people seemed glad they could feel

it. They sometimes appeared to cultivate it. But that was only because they thought it proved they were sympathetic. Yet obviously it had little to do with compassion or fellow-feeling. It was rather a kind of fear ; compassion was often stronger in people who were not distressed by any such physical disturbances. It might be useful, perhaps, that sensibility, to a writer searching for the adjective which would give an extra twist to the screw of horror ; but even to him it was a snare, apt to lead him into the higher sensationalism, of which we had had enough, and more than enough, in literature lately. It was quite compatible with cruelty, if it was not actually a necessary ingredient in deliberate cruelty. Familiarity with painful sights might even change it into that curiosity which watches the cup of anguish filling, watches with the deliberation of a man dropping medicine into a graduated glass. It looked humane, but it was a self-regarding, cold feeling. Practical people despised it ; warm-hearted people particularly disliked it ; benevolent people knew that it was no trustworthy indication of sympathy.

II

We got up as quietly as possible so as not to wake the others who were lying wrapped in rugs like brown chrysalises. The low room hummed with the sound of gentle snoring. It was stuffy ; it was cold. On lying down I had taken the precaution to dry my socks by putting them between my shirt and my vest, but the moment my feet were in my boots again the comforting sense of moist warmth vanished, and the familiar chill struck up my legs.

As we clumped cautiously down the wooden stairs the O.C. was whispering directions to the man on watch to have hot cocoa ready for us against our return. The job would be an all-night one. Outside it was bitter-cold, windy, and pitch-dark; no moon, not a star; only on the horizon there fluttered from time to time the lightning of guns too distant to be heard. There had been a booming cannonade round us that evening. Now it had stopped, and nothing was audible but the wind wuthering down the village street and the creaking of bare trees. There was the usual delay tinkering up the machines. I went in again to get extra blankets for the stretchers (two apiece would not be amiss on such a night), to fill the water-bottles with boiled water, and cram more cigarettes and chocolate into my coat-pockets. Then off we started—three cars; I in the last, since I had been along the road by day-time, and my companion, who was driving, had not. If we got behind—and he was bound to go cautiously—it was my business to remember where the shell-holes came. The road was shockingly bad—I knew that—narrow, with mud on each side deep enough to bog a heavy ambulance. I recollected two nasty places in particular: one a shell-hole filled with water in the very middle of the road, which by a miracle of luck was just not too wide for a car to skirt, and one where an enormous crater had broken away a piece of the road just opposite a smaller pit on the other side. What made one nervous on these occasions was the thought of the consequences of an accident. If one gets stuck, let alone the horror of upsetting a load of wounded in the open country at night, a mile or two from help—the road by which the others can be brought may be blocked for hours. Also our section had a reputation to live up to

with the French for doing night work along bad roads.

We swished quickly down to the next village with headlights on; but turning into the open country, all lights except the red back-light, had to be extinguished. We were in the dark. The German lines were near on our right, and again somewhere in front of us, a good way off. We started crawling along, straining our eyes ahead into the blackness. The little red light of the car in front, shining like a burning cigar, was a clue to follow, but it was drawing away quickly, and presently it had disappeared altogether. The wind pressed against our eyes. Sometimes the car lurched into deep, soft slush on one side or the other, and had to be righted by a violent twist of the wheel. Was the road curving? And were we coming to the holes? I tried flashing an electric torch intermittently. It illuminated a yard or two of mud and stones just in front, but left us dazzled afterwards with colour blotches, floating on the darkness before our eyes—worse than useless that. Suddenly the whole landscape was lit up by a pale greenish glare. The Germans, on the look-out for an attack, had sent up a rocket. Two flaring stars hung for a minute in the sky as though tied together, dwindled, and went out, leaving us again blinded. "I had better get out and walk in front," I said; "we must be near the first hole"; and, sure enough, I discovered a hole half-filled with straw-water and faggots, but not the one I had expected. More rockets went up, we crawled on and on, then turned abruptly to the left towards a small circle of white light lying on the road. The O.C. was standing there waiting for us, illuminating the large crater with his torch: "Do you see it?" "Right." In a minute or two we were in another village.

Light streamed across the liquid mud from an open door and two broken windows. The house (about the only one still intact) had its back to the enemy's lines, so no precautions had been necessary. On the other side of the road loomed up a shattered church, and opposite the open door stood a large crucifix in a shrine, much bespattered and chipped by shrapnel. The village seemed full of men moving quietly about—French marines in blue overcoats and round flat caps—so they mostly revealed themselves when they crossed a bar of light. One heard the gritting or splashing of their footsteps in the darkness, and saw here and there the wandering spark of a cigarette, which sometimes glowed brighter, throwing a momentary gleam on a thick hand, a bearded mouth, and part of a muffler. In the road there was silence; inside the lighted room a confused noise of talking and moans.

It was difficult for two of us to get into the room with a stretcher, and still more difficult to find a place to put it down. The floor was covered with straw, and the straw almost hidden by the wounded men lying upon it. Close to the door a surgeon on his knees was dabbing at a red hole in the side of a half-naked man, propped up by knapsacks, whose face wore an expression at once of apprehension and of relief such as a frightened child shows when it is at last being cared for. In the nearest corner crouched a young soldier with his cap still on and his face to the wall. He was hunched up like an ape in the corner of its cage, and was talking rapidly to himself. Those whose dressings were finished were mostly lying at the farther end of the room. To reach one of them it was necessary to pick your way among apprehensive, tortured bodies, setting down your feet now between broken legs, now beside bleeding heads.

And when in order to lay the stretcher it came to moving the wounded man nearest to the one to be taken, then, even if he had been talking or lying lethargic before, he generally began to cry out, either from fear or pain. It takes three men usually to get a badly-wounded man gently on to a stretcher, but here there was often hardly room for two *brancardiers* to shift their feet for the lift. At the door those borne out were covered with rugs, and their few things (caps, pipes), about which they sometimes showed pathetic anxiety, were tucked beside them. Then they were raised again and pushed by their comrades into their shelves in the dark ambulance outside. The stretchers were strapped, with parting words of encouragement; "*Courage, mon vieux*," "*Bon voyage*," etc., and often with assurances that they were lucky to ride in an English car which was going to carry them to bed smoothly and in no time.

But I am afraid the journey was neither very smooth nor very swift. True, we lit up earlier on the way back (one side-light), but the first part of the journey we had to crawl and bump along; and, as on the way there, we had constantly to jump down and peep about for bad places on the road, like someone hunting for a dropped sixpence. The summer lightning of the guns was still leaping now and then on the horizon, but the wind was blowing against the sound, and we heard nothing but the purring of the engine, the swish of the mud, and now and then, alas! when a wheel dropped or the car swerved, an agonized "ai, ai, ai" from the hood behind us. There is considerable skill in driving a car so as to get in and out of a depression with a kind of suavity of movement, and the ambulance-driver may find himself playing at last a sort of game with himself on such occasions—so instinctively

does the mind get away from close contact with what is painful. "Here's a beastly place. Can I manage it without a single groan? Done it! No, not quite. Well, nearly: count that half a groan"—that is the game.

Once out of the danger zone and in the main road, with our headlights raying out in front along the *pavé*, the old problem presented itself: Is it better to go fast and get the journey over, or to shake less and go very slowly? We tried both methods that night. If only we could have taken those vile little oblong stones at forty miles an hour, we should perhaps have hardly been rattled, only that was impossible; but we found going slower than a fairish pace seemed to make small difference to the vibration. The two hospitals for marines were in a little town some miles away. At last we saw the red lamps. One was on the doorstep of a small cabaret. There we unloaded. The bar-room seemed already full; perhaps there were beds and mattresses empty upstairs. Through an open door beyond, two surgeons in aprons could be seen hovering over a narrow operating-table. An elderly doctor in uniform stood with his back against the wall surveying the crowded floor with dazed eyes. I spoke to him. He tapped his forehead and said, "Sleep, sleep—not for two days and nights now." We had to take two of our wounded on to the next hospital. There they were laid in the passage to wait their turn to be examined, while we went into the kitchen and drank cups of black coffee laced with rum before returning again to the ruined village for another load.

Our engine was by this time hot, and it clanked ominously; we fed it with oil and with water scooped from the ditch. It still clanked, but we got there: crawling along in the dark, afraid every moment if we did not go faster we should

be held up by one of our own cars coming back again. The room had been emptied and partially filled again; but the loading-up went brisker now. Everybody was working more mechanically; strain and fatigue are opiates which, if not too strong, set one mechanically free. I no longer noticed faces. Nobody spoke more than was necessary. The bodies of the wounded men were just consignments marked "fragile," to be handled and delivered "with care." One smoked and gnawed chocolate, handed about chocolate and cigarettes in silence. Then the return journey—the game of no bumps, no groans. After several such to-and-fro journeys things began to telescope together in a dreamlike way. The bar-room of the cabaret, however, seemed emptier the last time; the sleepy doctor, I remember, was bending over a man lying loosely with his eyes shut. More coffee and rum; back again under a sky now clear and sprinkled with stars; a blue-black dome into which there was beginning to creep a hard sapphirine transparency; then at last our own long dim room once more, with its rows of warm-wrapped sleepers. Ah! to snuggle down in one's own sack between two of the chrysalises, to fall really asleep, feeling as if one had been tossing all night in tumultuous and distressing dreams! There is sometimes an almost mystic comfort in the touch of a pillow.

III

Montdidier, like Rye, is a red-and-grey town huddled on a hill, which rises from a plain flat as the Sussex marshes and stretching away on all sides to the horizon. At the end of several of the quiet stone-paved streets you see nothing but the sky. The town has rampart walks and two ancient, weather-beaten churches, begun in a spirit of

magnificence and brought to completion long afterwards in humility. The older houses, many of them in times gone by urban residences of the provincial nobility, seem as though they now sheltered lives more keenly private. Pull at the iron bobbin hanging beside one of those thresholds, which, though so well kept, look as though they were never crossed, and you divine it will be long before the tinkle brings to the door some little woman in silent slippers and meagre black, whom there and then you may suppose a caretaker, but next day meet hurrying to mass, quite, in her staid and sparing way, a lady. You divine that the grudging peep she would allow you would hint at an unluxurious spaciousness inside, swept and garnished, perhaps a little cold and dim, suggesting prudent neglect and dignified pointful economies. As I walked to bed, when the stones of the lampless streets seemed unnaturally white, and the queer sky-spaces were full of restless stars, the echoes of my footsteps between these silent houses no longer belonged to me in my peaked cap and khaki, but to the impatient pacings of some young hero in a Balzac novel, charged with a double dose of will and appetite.

One night, when a bright moon had put a little ghost in each clean black pane of the windows opposite, and the skeleton shadows of garden trees lay on the streets as clear-cut as on snow, I heard the sound of footsteps approaching, and at that hour and place this was unusual. A short, square, elderly man was coming towards me. When we met, we stopped ; and I observed that his trousers were of some sleek thin material and did not match the rest of his clothes, either in hue or texture. He was clean-shaven ; his cap was pulled forward over his eyes, and round his neck was knotted a not too clean handkerchief.

"Good evening, sir," he said.

I was surprised to hear my own language, for the English army was miles away ; but I was still more surprised by his intonation. It was the respectful and composed greeting of a well-trained servant. What on earth was he doing here behind the firing-line ? How had he got stranded ? Why was he still hanging about ? I asked him to turn and walk with me, and soon got answers to these questions.

He was a coachman (born in Suffolk) who had been thirty-seven years in France, and mostly in the service of a French count, the possessor, among other places, of a château not many miles away. I took out my map. Yes, there it was, the château, in a little green patch which was the park.

"It looks as though it must be now in the hands of the Germans," I said.

"No, sir. The French trenches are at the bottom of the garden. But the Germans have shelled us something cruel ; they're smashing up the whole place. I'd give five pounds to get my clothes. I locked 'em in the dicky of the old coach. Five pounds, I would."

His master, with his two daughters, had apparently stayed on, in spite of intermittent bombardment, for a fortnight. The Count was an old man. He had been unable to believe that his beautiful home was seriously threatened. The Germans had respected all that was his during their first advance, and he had their promise that they would do so in future. But, after their retreat, the French line, as bad luck would have it, was drawn across the bottom of his garden. The terraces in front of the house began to be pitted with shell-holes, and three or four shells had struck the house itself, yet he continued to live in it, and to

live, as far as possible, as though nothing very unusual were in progress ; changing for dinner, so William informed me, though spending more and more of each day in the vaulted kitchen at the back of the house, and at last even sleeping there with the rest of the family. Destroy Tilleroy, the treasure-house of ancient dignities and amenities which had survived the Revolution ? Why should this war be worse than the war of 1870 ? It was impossible. Had not a talk with German generals saved it a few weeks before ? Nations may quarrel, but such things are not done. So the family had stayed on till the chapel was roofless and the façade of the house full of gaping rents, the gallery choked with bricks, plaster and torn fragments of painted canvas ; while the woods round about them echoed day and night to the cracking of rifle shots. At last the old Count's equanimity had broken down, and, blighted and bewildered, he had betaken himself to Paris. His daughters, however, were determined not to go farther away than was necessary. They hoped to rescue, sooner or later, some of the things they had been compelled to leave behind. Yes, the Countesses were still in Montdidier, said William, and the bailiff and the cook and the game-keeper—in fact, many of the people attached to the great house. “I'd give five pounds to get those clothes,” he repeated, beginning an inventory of the articles shut in the back-box of the coach. “They are very good people,” he concluded.

It struck me while he was talking that on an off-day I might help to rescue those abandoned treasures—one ambulance and a touring car could take a good many things away. I told William I thought he might possibly see his top-boots again. But I could not give him a promise. All the cars might be wanted every night ; secondly,

we might not be able to get a military pass to the trenches for such a purpose. Still, would he introduce me to his ladies? He said he was sure they would be very pleased. They would be grateful, because they had not been able to get a pass themselves as it was considered too dangerous.

We ambulance men had been kicking our heels doing nothing for five days, and the prospect of a little adventure sent our spirits up. Some of us called on the ladies, and we obtained a permit to take them to the château. One evening after dusk we started. We had gone some miles along the road and turned to right and left many times—down lanes, across wide fields and through thick copses—when we were stopped in the dark by a young private soldier to whom we had already been introduced by the ladies. His regiment was holding the trenches at this point, and he was waiting for us by arrangement. Here we left the cars. "*Mon petit*," as the ladies called him, led the way. We splashed along a rutted cart-track, each carrying an empty sack. The ladies were in high spirits. Whatever they might be feeling at the prospect of finding their home irretrievably ruined, it did not affect their vivacity; nor did they give a thought to the fact that we were now walking within easy rifle-range of the German trenches. They expatiated on the advantages of having a King—look at the King of the Belgians! on the flight of the French Government from Paris—look at the worthlessness of democratic politicians! As they tripped along, they talked of the French army, of the certainty of victory, of the Napoleonic campaigns, with a shrug for "Bonaparte"—clearly to them a rather regrettable figure in the annals of national glory. Chattering, smoking cigarettes, splashing into puddles, we made our way further and further into the wood, till

le petit held up his hand to indicate that we had better now go quietly. There in the moonlight stood the château; a long, staid house with rows of tall small-paned windows, throwing the black shadow of its high-pitched roofs and slim chimneys on a formal statued garden, a garden which dropped terrace by terrace to an open sward. “*Ah ! comme c’est triste !*” one of the ladies exclaimed. This was the back of the house—if it could be said to have a back. “You will see two poplars at the bottom of the garden the other side,” *le petit* told us. “They mark the line of our trench. The Boches are two hundred yards beyond.” Presently we found ourselves on a drive, in front of a doorway flanked by stone lions sitting upright on pedestals. This was the entrance to the stables. The doors, grooved, decorated, panelled and solid, like the doors of some great room, were open, and the yard beyond was crowded with soldiers. In the centre rose a small octagonal tower, and down one side ran a broad, high colonnade. Between two pillars, a Rembrandtesque group of soldiers in overcoats were gathered round a man cutting up a sheep by the rays of a candle. Light streamed from an open doorway at the other end of the yard. It was towards this we made our way, pushing between knots of whispering *poilus*, who were surprised to see women among them. This room, once part of William’s old quarters, was now that of the officer in command. Harness was still hanging there, but the room contained a table and chairs of an incongruous magnificence, while a big picture from the château leant against the wall. We were received by the commandant with an ominously guarded amiability. Indeed, I thought at first that we might be refused access to the house. But the ladies conducted the interview with an airy persuasiveness in which the note of

appeal never lost gaiety and lightness. Many subjects by no means germane to our purpose were first touched on. Indeed, the talk centred more upon the commandant himself than anything else, till, suddenly, he gave us permission and a small escort. We were told to be quick. In the matter of candles injunctions were emphatic. A travelling light would be seen passing the windows and rents in the walls, and would draw the enemy's fire. We entered the kitchen by a side door. Stumbling over broken bricks and splintered boards, we made straight for the strong cupboard; and while our electric torches wobbled their circles of light over the shelves and the mouths of the sacks into which we tumbled pell-mell teapots, trays, candlesticks, and plate of all sorts, I noticed that our escort kept carefully between us and a gap in the wall through which the stars were shining. Subsequently, whenever the ladies "pointed," and started flashing, this human screen invariably formed itself round them. "More of us have been hit about the park than in the trenches," one man whispered to me.

Having emptied the plate-cupboards, we roamed about the house independently, each with a sack to fill. The oddness of the assortment of the objects missing after a burglary will never surprise me again; I know now the difficulties of a hustled burglar. The first room into which I penetrated was the dining-room; shadowy as every object was, I noticed its felicitous proportions. The carpet was covered with broken glass, which crunched underfoot. The tall and ample curtains let in a slip of moonlight, which shone upon a large oval mahogany table, and gleamed upon a side-board which I would have gladly put in my sack. There was an indistinguishable portrait over the deep stone mantelpiece. Should I attempt to

unhook it? Impossible. Beyond was a pretty boudoir sadly smashed and littered; its walls were covered with close-hung pictures, obliterated by a thick layer of grey dust from an explosion. It was a little room of which the furniture suggested care for both the past and the present, for both elegance and comfort. A heap of builder's rubble on the floor was mixed with the broken legs of gilded furniture. The curly golden mirror was starred with cracks, and the stuffing was starting from the damask chairs, which still stood sociably near each other as though their occupants had just risen. From this room I rescued a clock, a silver bottle, a book. If only china had not been brittle I could have filled my sack. A further door led into the hall. This was paved with smooth lozenges of black and white marble, and furnished with one dark carved wardrobe, gaping wide. Underneath a crystal chandelier, which hung from the high ceiling, stood an elaborately painted sedan-chair. The hall, lit from an upper story as well as from the ground floor by tall small-paned windows, was full of an aqueous blue light. And it was here that I felt overpoweringly, tragically, what a splendid specimen of French seventeenth-century architecture this house was; that style which, in its tranquil and severe proportions, expresses Racine and Corneille, as distinctly as the châteaux of the Renaissance express an age when the human passions lay nearer the surface, when order was not accounted strength, nor restraint a sign of inspiration. The wide gradual stone staircase ascended toward a great blank wall, on which in fanciful pattern the family-tree towered and ramified.

While in the gallery upstairs I was hopelessly trying to guess which pictures ought to be cut from their frames, I heard chattering and footsteps. Our party was once more united. We passed

together through more beautiful rooms, all begrimed and broken ; rooms in which the habits and possessions of many generations had evidently harmonized into a charming amenity. On these thresholds the ladies would sometimes stop for a moment with quick exclamations of horror. Yet it was hard to get directions from them. "Yes, perhaps," "By all means," or "Is it worth it?" There seemed no end to things they were prepared to leave behind without a pang. It was only in the bedrooms that they flitted, pounced and rummaged with real animation. There our sacks were stuffed with stockings, handkerchiefs and underclothes. Suddenly I heard a sharp cry of delight ; one of them had come across a real treasure at last. She was holding up triumphantly a rubber hot-water-bottle !

Nevertheless we left heavily loaded with a good many more or less irreplaceable things. Some of us carried clocks, others pictures ; one a silk heraldic banner ; others *bibelots* and candlesticks. If I had felt like a burglar before, I now felt like a brigand, walking through moonlit woods with a sack of clinking plate across my shoulders. The crack of rifles had begun. Those intermittent sounds reminded me of cover-shooting ; and the ladies, paying no more heed to them than they would to sport, had a grateful separate good-bye talk with each soldier who had accompanied us.

It was not until I got back to Montdidier that my pleasure in this little looting expedition vanished. It vanished when I suddenly remembered that I had forgotten William's clothes. Still, he *had* said he would give five pounds . . . in a tone which suggested rhetorical emphasis. Perhaps three would meet the case ? I saw William again. He took his tip and his disappointment philosophically ; and he rewarded me with a remark

in which I seemed to hear the strength and the limitations of England. I remembered that he had been in France thirty-seven years; I looked at him—Suffolk was still written all over him; I asked him how he liked the French. "Well, sir," he replied, "at first you don't like 'em much, but after a time you find they're a harmless people."

IV

We were asked to take a French captain in his touring-car to visit the spot where his brother had fallen and was buried. We thought he might prefer a solitary drive; but he seemed, when he appeared, to be in rather merry pin, so at the last moment I got in too. He was a hard, natty, little man in a fresh uniform and shiny top-boots, and he had a ready shrug for the terrors of war.

It was one of those still November afternoons. The brown copses in the hollows we passed were bloomed with smoky blue like a horse's eye. The captain talked incessantly as we rushed along between the bare road-side poplars. He was at once vivacious, prompt, voluble, and stiff. His tone when he repeated that *la guerre* was *la guerre* reminded me of people who say boys will be boys, and the lightness of his resignation set me wondering how it would wear. For though I could picture him an officer in an office—smick-smack, no hesitation—I could not imagine him at the Front, dealing with men in circumstances which throw one back on human nature as it is.

When we arrived at the village where we were to stop, the captain left us and strode off across the fields to look for his brother's grave. Like all villages near the French line, it was in a great mess, and full of blue-coated soldiers. Twenty or more were standing on the green doing

nothing; others were sitting on the churchyard wall; some hung about the slushy road; some came to the windows to stare; some lolled listlessly in the doorways; and from one of the cottages floated the strains of a gramophone—the music of boredom. One or two soldiers asked me the two inevitable questions, “Are then the English near?” and “How long do you think the war will last?”; and I, in return, asked them the two inevitable questions, “How near are the Germans?” and “How long do you think the war will last?” Then I handed round cigarettes till I had no more, and those who got some nodded and smiled, and those who came up too late nodded and smiled. And we all stood together in the mud.

There was a squashed loaf on one side of the road, a tin or two lying about, and on the doorstep of the nearest cottage the liquid footprints were mixed with blood. Looking up from this threshold I caught the eye of one of the soldiers. He also nodded and smiled. I began myself to sink into the collective torpor, and to dream also that we were all standing together in the mud. They, poor fellows, had been standing there for close on five weeks, and a little experience had already taught me before that man is not, let alone his other disabilities, an animal properly shaped for standing in the mud. For though after a time the familiar chill about the feet will act almost as a mesmeric suggestion that one is a cart-horse, the delusion is never complete enough. Four legs are too badly wanted, and men cannot stamp and snort for no reason. A sudden sound does not startle them into momentary clumping activity. Above all they cannot put their necks across each other and rub and rub. Only that gesture could express and relieve the mutual feelings of men who, having surrendered their individuality, find

themselves day after day, week after week, standing together in the mud.

For us two Englishmen, however, there was this afternoon a distraction in store. Someone shouted "*Messieurs les Anglais!*" We instantly swung round our haunches and pricked up our ears. An old priest was eagerly beckoning from a window. We went up to it. "Are the English near?" he asked. I told him that we were not serving our own soldiers, but attached to the French Army; our army was miles away. "How long do you think the war will last?" he enquired animatedly. Coming from him the question seemed like a fresh one, and we entered his little white-washed sanctum to discuss it. We talked it out over coffee and cognac, and concluded, with a sense of having eliminated the influence of hope, that it must be over in February, 1815.

As it was one of our duties to enquire, wherever we went, after the many English who had disappeared during the retreat from Mons, I went on to ask him if there were any English graves or identification-badges in the village. Had any English passed through? "No: not a single one of them. But what do you think I did?" he asked, gazing at us whimsically. "When the Uhlans came I rushed out into the road and waved my hat shouting, 'God save de King!' Yes, Monsieur, I tried to embrace an officer!" At the recollection of this awful *gaffe* his eyes and mouth became as round as a schoolboy's, who sees his booby-trap fall on the wrong head.

"And how did they behave?" I asked.

"How did the Boches behave!" He raised his hands and eyes to Heaven. Then jumping up he pointed to the smashed lid of his bureau. "There! They took all the money, all the offertory money, all my little treasures! *Les Boches!*

Voilà les Boches, voilà, voilà, encore les Boches." And at each exclamation he thrust at us crumpled manuscripts, torn books, and photographs with heel-marks on them. "They turned out every drawer; they threw the things about the floors, and trampled on them; they pulled down the books; they took all the money! *Peuh! Voilà les Boches. Peuh!*" He sat down with the emphasis of an immense contempt.

"And where were you while all this was going on?" I asked.

"I? Oh, I was lying in the nettles at the bottom of the garden," he said simply.

Seeing us look rather surprised, he began to laugh; to laugh so immoderately that he doubled forward in his chair till only the top of his tousled white head was visible. "Yes, I and my old housekeeper spent the night hiding in the nettles."

We were sorry to part from this most sweet old person who was without a sense of dignity, though with a little pains he could have emulated the port and presence of John Bright; but the captain had passed the window, and we rose to go. On the drive back the captain continued to talk as he had talked on the way out. His *tenue* was as rigid and precise as before. His ideas on every subject were done up as neatly as packets of French chocolate, and as convenient for polite handling. Together the two men seemed to me to represent two sides of the French character with which we are most out of touch. I could not help contrasting them, wondering vaguely beside which I would sooner fight. Of one thing I was quite sure, that if the captain did hide in a bed of nettles he would not tell anyone.

V

The road to the mill was a narrow lane with low hedges on both sides; it ran across some water

meadows, divided here and there by lines of pollard willows. We had gone about half the way when a dagger of white fire, a yard or so long, suddenly leapt from a gun behind a willow-clump, and there was a crash which made one's whole body blench. Another followed, and another, and another. Half-a-minute's pause, and presently the dusky fields behind us were scattered with winking flashes: and the shattering whacks condensed into a solid element of uproar in which, for the first moment or two, one existed only with the confused consciousness of a man who has taken a bad header into deep water. Then, as a diver collects himself and accounts for his sensations—the confusion, the pressure, the noise about his ears—so one rose out of that submerged condition into an ordinary awareness, which included, alas, an uncomfortable certainty that one was wishing oneself anywhere but among the guns. There is, however, a sort of opiate in enormous uproar; it prevents you from imagining you *could* be anywhere else. The Germans were replying, it struck me, very feebly. I saw the smoke of explosions now on this side of the lane, now on that, but I could not hear them. It was nothing to what our cannonade must have been to them. If anyone wants to know what the ordinary man feels, who is unaccustomed to finding himself on the edge of a little modern battle, and is bound to remain inactive, I can tell him: "So this is IT. Am I going to become unbearably nervous?" That is the form fear first takes. I was very glad of distraction, though in this case it came in a way which held up the cars. A long stream of muffled, great-coated figures were hurrying across the road in front to the attack, and we had to pull up. As they swarmed past the car I shook hands with some of them, and bawled *Bonne chance!* The faces of

some were tense with a kind of exhilaration, others seemed going forward in a sort of moody stupor. I plunged for handfuls of cigarettes (the blessed cigarette which seems never to come amiss even to a soldier before a charge, or indeed afterwards, when, perhaps, he is mortally wounded) and handed them out till my pockets were empty. They smiled and hailed us with any scraps of English they could remember. "Good-night," "very well," "old England," "good luck." One Marine, evidently very much pleased with the idiom, shouted laughing, "It's bloody f——ing cold"; it was his *moriturus te salutat*.

VI

"Talker" was, of course, a term of contempt. The first time I heard it applied to anyone out there was in the streets of Amiens.

I was walking with one of our own section of the Red Cross, one whose irreproachable military bearing was wont to make us all feel the civilians we were. Indeed, no stranger who saw him imperturbably turning out his toes would have guessed that he, too, was a "sutler and camp-follower." Our cars were waiting in rows in the street, and we were passing them when a French officer ran up behind and plucked me by the sleeve. It was not his white face or the blinking glitter of his eyes which struck me first, but his manner. It was so oddly, in its deprecating urgency like a beggar's. He wanted a lift in the direction of Paris, couldn't we give him one? He kept repeating: "I must get home. I'm tired, tired. I must get home." . . . "There are only three of us left," he went on rapidly, "a captain, a major and myself. It was awful. It lasted for days. I must get home. My nerve has gone. I didn't

mind at first; I was very brave at first. But I can't bear a noise now; if a horse stumbles, I shake all over. I'm no good at all. If I hear a gun, I run away; I run—I can't help it. Can't you take me home? Trains are so slow. I'm no use. I've been sent back to rest."

But it was impossible to give him a lift; we were due in an opposite direction. My companion shook his head and strolled on; the Frenchman, with his reiterated "It was awful; I must rest. You have no idea . . . only three officers left," gradually fell behind.

"What a pity one of us can't take him!" I said.

"Oh, he's a talker," my companion replied.

Since then I have met several "talkers." They are common. I remember asking the way, my first night at Montdidier, of a dark form in an almost dark street. At the sound of my voice he turned upon me with a sudden clutch of alacrity. He began telling me at once he was back for three days from the trenches; he would show me the way—yes, he would accompany me. Might he dine with me at the hotel? He joined the four of us at our table, and we drank together two bottles of rose-pink champagne, and listened while he talked. Talked? His tongue went like a clock when the pendulum is off. He reminded me both of a schoolboy just home for the holidays and a man who has seen a ghost.

I have met "talkers" in khaki, too, since then, and sometimes I have wondered if my companion on that stroll through the streets of Amiens would continue in all circumstances to turn out so imperturbably his toes? I have concluded he might. But would the word "talker" in his mouth suggest that particular shade of contempt?

—ie by I have found a nickname for him,

“The Ibis.” It has caught on, though nobody can see the point of it except myself: *in medio tutissimus ibis*—he reminds me of the school-boy rendering of that tag, “In the midst stalked the Ibis, the most cautious of birds.”

OUR LEGENDARY CONTEMPORARIES

I

THE OLD EMPEROR

AT a table spread with a fine linen tablecloth, by the open window of a high, quiet room, sat a clean, old bald man in a green uniform, with an order round his neck. Opposite him hung a full-length portrait of a splendid lady with a proud, energetic face crowned with many coils of dark hair. The golden and lapis-lazuli clock upon the carved mantelpiece marked the hour of eleven. Outside, on the terrace, a sentry walked backwards and forwards, the sun glinting on his bayonet and buttons. The soldier was tired of thinking himself a lucky dog for not being away with the army in Galicia, for not having wife or children or even a sweetheart, and he could think these thoughts no longer. If he could have whistled, he would have felt better ; but as it was, he had nothing to do but eye disparagingly the statues and flower-beds which rayed far away in all directions from the palace into the vistas of a beautiful, boundless park. He was thirsty, too, which reminded him that neither beer nor life were what they had been ; and this made him feel sad. At each end of his beat he stopped, clicked heels, shouldered arms, and turned like a doll ; in becoming a mechanism for a moment, he forgot all this. The wind and sunshine played with the trees and fountains.

Inside the room there was no sound but that

of the slow suction with which an old man was imbibing a creamy gruel from a wide cup, which he held shakily with both hands to his face. He would have liked to put it down ; but he was determined to go on drawing in the thick liquid till he could see the gold crown and double-headed eagle at the bottom of the cup. " I can see the heads already," he said to himself, tilting it up more and more, swallowing, and gazing into the cup. " The tops of the wings. . . . Yes, that's enough." Replacing it carefully, he wiped some drops from his white moustache and clean-shaven chin. Then, leaning back in his chair, his eye caught the shine of silver on the table, and he stared at it inhibited.

How long he remained in this condition he could not have told. Two men were whispering near the door ; one was in black knee-breeches and white shirt-front, the other in a uniform covered with orders and medals. At the sound of voices the old man wrenched his eyes away from the silver and looked up. The man in uniform withdrew, closing the door gently behind him ; the other, making two bows, advanced towards the table.

" Will your Majesty grant an audience to General Count X ? He wishes to tell your Majesty the news of a glorious and complete victory which has just reached us from his Highness the Generalissimo."

" Let him come in."

The officer advanced, bowing, and, after congratulating his Imperial Majesty upon this latest triumph of his arms, proceeded to give an account of the victory. As the old man listened he drew more vigorous breaths. He held himself more upright, and the deep fold across the chest of his uniform straightened itself out ; and when the General had finished speaking his eyes beneath their

saurian lids rested on the speaker with an almost threatening animation.

"You are to understand, once and for all," he said excitedly, "I trusted Count Bismarck. Austria may lose battles, but she cannot be beaten. And if the King of Prussia has had the insolence to press for one inch of territory, let him understand that the terms are *impossible*. Let him remember that there are other Powers who wish him no good. France . . ." But, catching the glance exchanged between the other two, he suddenly collapsed, dwindling into himself again. He began nervously pushing away the cup in front of him, muttering : "Very glad ; very glad indeed. God be thanked ! Gallant fellows ! Tell the Archduke he has done . . . I expected. . . . Praise be to God ! I must get a little sleep, a little rest."

"Majesty has not forgotten Majesty's orders for the day," said the man in black respectfully.

"No, no, no." He reached out his hand and struck the spring of a silver bell.

"Your Majesty, I have them with me. In accordance with your wish, the authorities of the Empress Elizabeth Hospital are expecting you at two o'clock. Count X. will have the insignia of the Order which your Majesty graciously wishes to bestow on the Herr Professor." And he gently pushed across the table a few sheets of glossy paper inscribed with sentences written in a clear, large hand. "The notes which your Majesty ordered to be drawn up."

The old man's eyes travelled over a statement of the number of patients treated in the hospital, a reference to the righteousness of the cause, and an expression of gratitude to God for having manifested on so many glorious fields His championship of the Empire ; and, having turned the page, they rested for a moment on a phrase or two : ". . . the

burden of many years and many personal sorrows which it has been my lot to bear." He nodded and made a gesture to indicate that the interview was over, asked that his physician and valet should be sent to him, and lay down on a large, cool red leather sofa.

From a warm half-sleep full of fancies, he woke lightly. His physician was feeling his pulse, and presently beckoned impatiently to a servant holding a glass on a tray. The august patient appeared refreshed. There was a different look in his face now, a look of slyness and hardness. Pressing both knuckles hard into the sofa, he raised himself into a semi-upright position and, reaching out for a gold-headed cane, which was instantly put into his hand, he made his way slowly to the door. At a side entrance, where he received his military cap from one man-servant, while another laid a cloak about his shoulders with the tenderness of a dressmaker shrouding a delicate dress in tissue-paper, a powerful motor was standing. It drove smoothly away with him into the town.

Under the trees of the boulevards children were playing: long-legged little girls in tartan frocks and boys in socks and sailor suits were running about, skipping, or chasing hoops along the broad gravel walks; and on the benches in the shade nurses sat side by side, rhythmically pulling and pushing their prams backwards and forwards as they talked. Nothing here was changed, except perhaps there were fewer children. In the streets there were certainly far fewer men who were not in uniform. As the royal motor passed a pavement café, two young officers dressed in light blue and smoking at a little round table sprang to their feet and saluted. They were discussing and comparing the Russian and the Prussian character. They instantly resumed their conversation. "Yes," one

was saying, "a touch of orientalism has its drawbacks in war ; but if a man can't understand the meaning of the word vanity, he is, for all his qualities, a vulgar soul."

The old man in the car was pleased with the soft pressure of the summer air against his face. He had been touched by the sight of the children on the boulevards, they reminded him of his address to all the children of his Empire ; and, above all, he felt his mind was now firmly seated in the actual. As for the little ceremony before him, what surprise, which could possibly shake his poise, could be lurking for him in that. Suffering ? Had not *he* suffered enough himself in all conscience during his long life ? He knew all that by heart. The steps of the hospital under the awning were lined on each side, with doctors and surgeons in uniform or frock-coats, and behind them rose a bank of nurses. Up the druggeted staircase he went slowly with bent knees ; the Professor was a little behind him, and they were followed by a cortège of high officials, generals and doctors. On the first landing the doors of one of the great wards stood open : a long, cool room, a stretch of shining floor and two rows of beds. It might be the place of pain and distress, but to look at, it was a beautiful "symphony in white." All eyes were fixed on him with a stare which knew no shyness ; some were feverish, bright eyes, others slow, sleepy eyes.

Leaning on his cane and stopping at each bed in turn, he asked the same questions when he stopped, and made, hardly varying the words, the same little speech. "You have suffered for God and the honour of your country. Your Emperor is grateful to you and will not forget." In one there lay a smiling man who at intervals, regular as clockwork, turned his head to one side and snapped the air as a dog snaps at a fly. The old man stood and looked

at him. "Do you know me?" he said. Then, getting no reply, he turned to the Professor, and asked what was the matter. The Professor explained that the man had lost a portion of his brain.

As he moved up the long room, stopping at each bed for a minute and saying the same words, some saluted him theatrically, others only smiled. He stood calmly with his hands upon his cane, as though his mere presence were a force which left all well behind him as he passed. At the bedside of a young man, the Professor explained that this one would soon be as right as ever again. "And you want to go back and fight for us?" The young man lowered his eyes: "No." "Ah, brave soldier! I knew you would say that," and whether he had understood or not, the old man proceeded composedly on to the next. The tour up one side and down the other was almost completed, and he was about to leave the ward, when he was arrested by a voice: "Majesty! Majesty!" It came from a bed near the door, whose occupant did not raise the blanket; he had only one arm, and the hand of the other was missing. The Professor pressed forward with a smile: "One of our most astonishing surgical triumphs, your Majesty." But the Emperor did not seem to hear; his eyes were held by the eyes of this torso of a man propped up against a pillow. "Majesty, you are all-powerful; tell them to put me out of my misery." The old man's hands began to tremble on his cane, and he turned quickly round. "Take me home. Please, please take me home," he muttered, and, clutching at the arm of an equerry he shuffled quickly out. Down the stairs the voice pursued him, "Majesty! Majesty! Tell them, Majesty . . ."

II

THE OLD MASTER

“The Master’s” study was half a museum and half a library. On the black oak writing-table, gleaming in the wintry light from the windows, stood an antique bronze statuette, about six inches high : an engaging little naked Venus. At her feet lay his ink-pot, a lump of hollowed jade, its natural bosses and depressions smoothly moulded into a vague conglomeration of flowers and human forms. On a renaissance cabinet near the wide stone fireplace (itself removed from the retiring-room of an ancient castle, and carved with roses and myrtle) stood another Venus, represented with a beard and male organs of generation, with a sceptre in her hand and the body and breast of a female ; on the pedestal were cut in faint red letters the words “Duplex Amathusia.” On one side of it were a number of turquoise-blue Egyptian gods with animals’ heads : on the other a Spanish saint, carved in wood, the swirl of whose gilded garments expressed his ecstasy. Two queer Thibetan masks frowned and grinned above the door, and the wrinkled head of Homer stared blankly from the top of a bookcase running the whole length of the room. The serried rows of sleek books, some thick, some thin, rose one upon the other from unwieldy folios to a top-shelf of many tiny volumes, which looked as precious to the eye, and felt as pleasant to the touch, as enamelled boxes. The receptacle which once held the face-powder of Ninon de Lenclos now held the Master’s cigarettes, and his biggest armchair was upholstered with the vestments of an Abyssinian bishop. The pictures were all small and old. Of two of the most noticeable, one represented a sweet-faced, exquisitely

clean old monk on his knees, gazing up into the still vault of heaven, and the other a Holy Family with St. Anne hanging out the under-clothes to dry. The library was composed of only two kinds of books : well-attested masterpieces in all languages and of all ages, and a choice collection of the most extravagant examples of human enthusiasm and aberration.

The Master came in, and sitting down heavily by the fire, he threw on a faggot to make a blaze. It crackled upwards, brightening his worn, plump face, and, leaning back, he held out towards the flames his large clean hand. It made him feel happier. But when the golden twigs crumbled to red and white ashes, depression rolled over him again. He sighed and looked helplessly over his shoulder at his writing-table. He could only think of two things now, his childhood and the war. All day long he thought of nothing else. Except for the miserable people lugging, that very moment, their children and bundles along frozen roads, with pictures behind their staring eyes of charred homes, of faces, once responsive, last remembered as yellow objects, dirty, mauled, like turnips sheep have left half-eaten, or as terrible masks with lifted lips and goggling eyes, expressing, violently, nothing—except for those wretched ones, instinctively flying to preserve lives they no longer wanted, he was perhaps as miserable a man as any. Not that the war had touched him nearly. He had no sons ; he mourned no friends ; his contemporaries were all old men ; his life went on as usual. One or two of the young men who used to come to see him, to listen to him and laugh with flattering alacrity, would never come again : that was all. He remembered one in particular ; how he had, while on leave, come up with an introduction to this very room, glowing and clean as though he

had just come out of a kind of moral bath ; and how they had talked together about Theocritus. Soldiers were the only people he could be sure now of talking to as though nothing in particular were going forward. He had never written or said a word that could help them or could ever occur to their minds in these days. Yet they seemed to treat him as though he were quite a sensible man. Indeed, all that he had written had been distinctly to belittle the profession of arms ; yet of all kinds of people soldiers seemed the least inclined of any, if they had been at the front, to suspect him of being "unpatriotic." The majority at home treated him as a pernicious fool, and he was constantly coming across passages in papers and magazines in which his "literary extinction" was mentioned gleefully as one of the signs of the times. The tone of these references implied that he would feel this acutely. He did mind ; but so little in the way the writers thought that they made him smile. He minded in a much more dreadful way. It was not the eclipse of his importance at the moment he cared about. Something else had happened ; his own feelings had shown up his work. All his life he had spoken as a wise man ; in the lightest passages in his books, in the lowliest, his own wisdom had always been implicit. He had only had one thing to say. No writer had touched on more subjects ; but none had repeated himself more often. His message was that man was a little creature, and if he would only be humble enough to know that pleasure was good enough for him, and learn that his troubles came from turning up his nose at the gifts of that good Goddess, mother of the arts, all would go well. She bestows them lavishly ; so lavishly that no one need ever be very eager to grasp one particular pleasure or to snatch it away from some one else. Miss pleasure here, you will

find it there : if only you understand it is that you want, and that is good for you. Pleasure will make you kind, too. You will throw no stones at your neighbour and you will live on easy terms with yourself. True, pleasures do not satisfy ; but if they do not, is there not "sweetness and youth" in desire ? And if Nature has made you that anomalous creature, a thinking man, why, what an inexhaustible spectacle lies spread before you : the strange paths men are impelled along by motives they do not understand ; the extravagant distortions of natural beings into which they puff and pinch themselves ! It needed only a little detachment, and the folly of the world became a spectacle hardly painful, even subtly flattering to one who looked on. This had been the drift of all he had ever written in history, fiction, criticism, and verse. But this wisdom did not work with him now. The world had claimed him as part of itself. He had never chuckled savagely over the welter of the world, like Swift or Voltaire ; he had preferred to smile and to pity. His detachment had charmed. It had persuaded a whole generation that nothing was quite so wise as to see folly everywhere and forgive it. He could see men's folly clearly enough now, in all conscience ; but it no longer seemed his part, or anyone's, to forgive it—individuals perhaps, but not *it*. Yet when he had heaved himself up, and gone to his table, the words, when they came, fell into their places with the accustomed suavity, and pity and took on the old detachment. He could not bear what he had written.

"So this is how I used to write about the struggles and catastrophes of the past," he thought. "My God, how much I have left out!"

THE HARVEST OF A QUIET EYE

I ATTENDED the Labour Congress (August 25th 1917) at the Central Hall, Westminster, with a view to describing the proceedings, but my impressions were so numerous and varied that as soon as I had walked down the marble staircase of that useful but cumbrous structure out of the shadowy, noisy hall into the sunny, noisy streets, I knew already that as a reporter's "piece of graphic" my article was doomed to failure. One must have some kind of focus; I had none. The only way of dealing with my impressions would be, I realized, to talk about myself. And so I shall. Before the proceedings began I settled into my seat with the excitement of a girl at her first ball. You may open your eyes at this. "Certainly," you will say, "the occasion was an interesting one; but, surely . . ." No, it is not an exaggeration; let me explain. The word "Labour" in the political sense, to a man like me, is a word of mysterious significance. It suggests to me hopes for humanity, fears for much that makes life delightful to me, the righting of enormous wrongs and the infliction of many injuries on individuals with whom my nature is in sympathy, the possibility of a dull, lustreless civilization, but the only chance of a really noble and dignified one. Therefore to me the spectacle of "Labour" in council was moving and august, and the commonplace appearance of the delegates could not hide that from me. The subject under discussion also interested me, and the manner in which it would be

discussed and the conclusion which would be reached upon it would be some measure, I thought, of the diameter of the brain of this leviathan, Labour. I regret to say it turned out to be some thirteen hundred thousand inches shorter than I hoped. "Canst thou take Leviathan with a hook?" After it was all over, the answer to Job's question, I feared, must be in the affirmative; though it could be added, with truth, "but the hook is very liable to come out before the monster is fairly landed." When we all dismissed for luncheon I was in good spirits; but when the Conference was over I was in dreary spirits. It was not that at 1 p.m. I was full of hope that the voting would be to my mind (the miners' rock-over to an anti-Conference attitude precluded such hopes), but I had just heard a speech which had put a glow into me: a sharp sensible speech with self-forgetful passion in it, very different from the mouldy *bravura* of personal explanations. That phrase is not a direct dig at Messrs. Henderson and Barnes, who on this occasion were right to put their own cases. But I have often noticed at public meetings of every kind, and the Conference was no exception, that when the speaker turns from what he stands for to defending his own conduct, a peculiar energy is infused into his gestures and words. He seems to speak with freshness and will, while the audience wakes up with an eagerness which seems to say: "Ah! ah! this is the real thing." Undoubtedly they share emotionally the same sense of proportion. When the speaker is a working man, transition to this deeper animation, because the method of oratory is then simpler and more transparent, is still more noticeable. The people's orator cannot resist the cries of "Good old so-and-so!" "Stick it out!" etc., etc., which his first words about himself elicit; and on the whole I prefer the bursting

vehemence of self-justification which follows to the polished perturbation as of one unaccustomed to speak of himself, or to the self-contained detachment as of one who does so only as a necessary duty, so familiar to us in the orators of the governing classes when they begin by saying: "To touch on a personal matter." I was struck on this occasion by the absence of shyness and nervousness in the speakers; the naturalness with which most of them began to speak and the naturalness with which they stopped. This was heartening to me. For apart from that estimate of our civilization which is summed up in the saying of Tolstoi's, "The rich will do anything for the poor except get off their backs"—an arrow I shall never be able to pull out of my conscience—the principal consideration which makes me democratic in feeling is a preference for the plain clap-trap of the semi-educated to the more insidious and perfect humbug of the well-to-do. If a man is going to pretend to be better than he is, *sans peur et sans reproche*, perfectly pure, perfectly disinterested, adequately informed on every necessary point, quite unbiased in judgment and all the rest of it, I prefer that the result should not be much more plausible than a child dressed up as a Red Indian.

But to return to the subject of personal explanations, which were so important a part of Tuesday's proceedings and form invariably so large a part of public life. When we are all in heaven, and when the works of the Recording Angel, miraculously indexed, and doubtless, if I do not misunderstand human nature, by far the most popular volumes in the heavenly library, are consulted by orators, I can imagine most of them passing a perplexed hand over their foreheads as they read the fascinating pages containing their own records, and muttering to themselves: "Why, I thought

I spent my whole life in advocating this or that, attacking this or that ; but, good heavens ! what pages and pages and pages there are merely about how I behaved in such and such circumstances, how right I was to do this or say that, in spite of appearances ! Perhaps these repeated and repeated explanations were necessary, but I never guessed they would in the end bulk so large." At this meeting everyone was expecting a personal explanation from Mr. Henderson. It was necessary. All I wished was that his statement had not been so "statesmanlike," and delivered at moments in a manner almost archidiaconal. I wanted him to speak more out of himself. I wanted him to say straight out : "I feel bitterly about the way I have been treated. One of the things one can't get over in Mr. Lloyd George, when he has tripped one up and sent one sprawling, is the advantage he takes of one's own decency. He counts, and knows he *can* count, on certain people 'playing the game' whatever he does. But instead of that making him treat them with more consideration, he takes it as a pull he has over them. And the damnable truth is that in the political game it is a pull. He knew I was helpless. Partly because I am the sort of man who hates to appear to act as though paying off scores, chiefly because I believe for the good of the country and the success of the war it is absolutely essential that Labour should work with the Government. Because of all this I am most anxious you should not try to turn him out ; but if you feel, as I do, that he would never have slammed the door of the Cabinet in the face of Lord Curzon and sent Barnes out like an office-boy to fetch him in at the end of two hours, and if you think, as I do, that expresses his attitude towards Labour as opposed to Wealth—well, put it in your pipes and smoke it till the proper time

comes." Such sentiments might be divined in what Mr. Henderson said, but he spoke more in grave sorrow than in anger, and for this I was sorry. I missed the democratic frankness, the democratic passion. That was the flavour which exhilarated me in a speech which soon followed ; the speech which sent me out to luncheon in a glow.

Several speakers had spoken after Mr. Henderson, and the motion before the Congress was that the Labour members of the Government should be at once withdrawn. I had looked away from the platform to survey the restless rows of simmering delegates behind me, when a curiously urgent, slightly veiled voice made me turn my head towards it sharply. A long man, flat-chested, with a loose flop of greying fair hair and moustache to match, was standing on the platform, grasping the rail in front. The hank of hair kept jerking upwards and falling forwards as he stooped to emphasize what he was saying, or drew himself suddenly up, like the crest of some excitable bird. What he said was perfectly clear, and each sentence masterfully emphatic. I turned to my neighbour : " Who's that ? " " Don't you know ? " he said. " That's Bob Smillie." Of course, I knew him by name, and I remembered his *mot* too, about those recruiting-posters, representing a nonplussed but able-bodied and still-in-the-flush-of-youth papa being posed by a boy with the question, " Daddy, what did you do in the Great War ? " " If my son asks me that," he said, " I shall say, ' My boy, I tried to stop the bloody thing.' " What he was saying was perfectly good sense. Referring to Mr. Henderson, he said : " resignation " was in his case a soft word for " chucked " ; and presently there was a loud roar of laughter at the story of a lodger, thrown out of the first-floor window by his landlord, who picked himself up, saying that he would

not sleep in that house another night. But the object of his speech was to prevent the motion recommending the withdrawal of Labour from the Government being put : " You know perfectly well that the delegates cannot vote in favour of it without consulting their societies...It will be lost by an overwhelming majority. It will be said *that* is the voice of Labour. Labour has again and again been made a fool of in this way." When he slewed round to my side of the hall and I could see his face, the crying face of a man in almost mortal distress, I saw in it the same vehemence that I had felt in the swing and jerk of his gestures. Friend Smillie, I know nothing or next to nothing about social questions or what goes on in your world ; a compliment from me to a Labour Leader is worth precious little. But were I suddenly endowed with creative power to plant men, I think I would risk it, and lay down at once 20,000 replicas of you. No doubt I should have to temper the results of this fiat by a numerous creation of other reformers who would see the many-sidedness and intricacy of things ; but I swear you are the vital ingredient in the mixture which can move the world.

Mr. Will Thorne made an impression on me of the kind which it is delightful to receive, but not so flattering to make ; for those human beings who are privileged to make that impression, from a kind of modesty perhaps which is itself part of that power, are absolutely unconscious, or even rather contemptuous, of its effect on others. It is possible that Mr. Will Thorne's conception of himself is as a sort of Danton or firebrand, and that he conceives his rise to eminence as due to the violence of his views and the revolutionary recklessness of his spirit. He hinted, indeed, that the intransigence of his Internationalism and Socialism,

after the war, would be something horrific. But, if I may judge from the impression he made on me (these notes, remember, are only snapshots of men seen once like characters in a play, and have no more authority), he was always elected because no one could help liking him confoundedly; especially after they had laughed a little at his simplicity. There are people whom, when one has once laughed at them, one can never like quite so much again; there are others to whom afterwards it is impossible not to remain attached. I could not help thinking what a splendid Duke of Beaufort he would have made. He would have roared at you loud enough to make you jump in your saddle if you rode too near the hounds, but it would leave no soreness or sense of humiliation behind. In fact, I saw him best in some such circumstances, the amplitude of which would give wing-space to the sweep of an easy kindliness, a simple loyalty, and a still more simple obstinacy; I saw him better thus, at any rate, than in the bewildering, cross-purposed world of politics.

I admired Mr. Purdy in the chair. A good many things must have astonished the Russian delegates on the platform, but none, probably, more than the way in which Mr. Purdy controlled an assembly which at times reached a pitch of disorder dismaying even to a ragg'd fourth-form master, by tapping the neck of a water-bottle with a penknife. The English are a race with a great calm and sense of order at the bottom of them. They are also a reasonable people. I only wish they were not so self-righteous. In that respect they are mad and most difficult to deal with.

Before the voting took place I went up into the gallery that I might see the many as one. It was like looking down on the hide of some agitated

animal, bristling in places, smooth in others, undulating with the play of muscles beneath, an animal emitting an extraordinary jumble of purrings, snarlings and yappings. When the result of the voting was given out, both sides were pleased, and the uproar was commensurate. The strains of "The International" and "Keep the Home Fires Burning" struggled for predominance among miscellaneous bawling stronger than either. But the excitement was by no means over. There were the amendments to discuss, among them the question of proportional representation at Stockholm. Before this was put to the vote there was a virulent and hearty pandemonium—both adjectives are required. I could not make out what it was all about. I perceived, as in the end did the chairman, who was as busy as a conductor at a Wagnerian climax, that Mr. Ben Tillett was anxious about an amendment of his. One of the small impressions I carry away with me is the picture of him advancing up the gangway, in a neat grey suit of remarkably smart cut, bawling to the point of congestion and with both hands round his mouth: "Point of Order." Suddenly he sat down with the reposeful satisfaction of a man who has made a great speech.

NOVEMBER 11TH 1918

The maroons went off as I was pulling on my boots. It was eleven o'clock, and the war was over. I went to the top of the kitchen-stairs and shouted, "The war is over!" The washing-up clatter stopped for a moment; someone exclaimed, "Thank goodness!" As I slammed the front door I said to myself "The war is over." I repeated it again; but meeting with no response, I began to abuse myself. "You clod, you dead-alive lump, the war is over!" Still no response. "Well," I thought, "at any rate I can go out and see how happy people are; that I shall enjoy." In the street men and women were walking briskly with the same intent. Each looked to see how pleased the other might be, and each, having caught a reflected ray, beamed on the next passer-by. Apart from the few self-generators of high spirits, who were hooting and hailing others intermittently from bus-tops, most people, it struck me, were out to gather emotion. Here and there a few flags fluttered from the windows, and women came to doorways or up area steps to smile on every one that smile they usually reserve for their own children. A drum-and-fife band followed by some soldiers turned the corner; I felt inclined to cry. Should I follow, and in tears? "No. This time," I thought, "I'll be on the hub of things; so on to Buckingham Palace." Many were bound in that direction. The crowd, at first loosely-flowing, began to congeal, then to solidify. Its current was strong enough, however, to sweep me some way up

the Mall, in spite of the stream flowing down it. I caught at a cannon, crowded with people, and mounted. At last I could look round. The Mall was choked with vehicles invisible under their loads; on the pavements and between the traffic, heads were set as thick as cobble-stones, and above them fluttered innumerable handkerchiefs and little flags. The statue of Queen Victoria caught my eye; up it black figures were swarming like ants over sugar. One youth, looking as small as a child's doll, already lay comfortably cuddled within her fat marble arm, another was pulling himself higher by the help of her nose and her veil. The chaotic din of yells, cat-calls, tin-noises and squealers swelled now and then to a roar. Near me a block of Canadians kept chanting with rhythmic persistence, "We—want—King George." And there, sure enough, far away on the Palace balcony, appeared a little group of figures, male and female. One was doubtless the King; he was probably making a speech.

A crowd is usually the most incomprehensibly patient of beasts; but that day its particles were restless, and longing to disperse, move, recongregate, no matter where. It began to loosen and swirl, and I, too, was washed gently on under the Admiralty Arch into Trafalgar Square; caught now and then, like a straw on a rock in a stream, then pulled firmly away, on down Whitehall, where the housetops were trimmed with people, and the windows were blocked with faces. Sometimes a snowstorm of paper wavered down on our heads; it pleased me to fancy the scraps were once copies of D.O.R.A.

But it was time for me to exercise initiative; and like a swimmer who makes the bank but touches it lower down-stream than he intends, I landed and reached my destination. There, in a high-perched

room looking over the Thames, I was absorbed into private life. I became as a plant in a parlour-window whose leaves are still, though outside the wind is shaking bushes and trees to their roots. And looking out of the window I had to tell myself yet once again that the war was over at last. There was the river, there the black boats and the barges punching up or gliding down tide; there the familiar silhouette of warehouses, factories, chimneys, there the rayless London sun, "shining like a new penny in a basin of soapy water." Yet how often I had looked on that scene, feeling far happier than this! The distant howl, it is true, brought a faint glow of emotion. But it is lucky I haven't, say, a toothache, I thought; it would need but a little trouble to cover up all my joy. Then I thought of the recumbent figures in hospital-blue on Carlton House Terrace, pulling themselves by cords from their pillows to wave for a minute at the crowd in the Mall below; of the lorry-loads of nurses I had passed, jigging and cheering; of one anxious, impatient face—a woman's—in a taxi with luggage. Communal satisfactions are only a background to other feelings; that it should be well with the background is often vital to real happiness, but the sentiment of life within is so near and dear, that whatever impinges on this takes precedence, though not always in judgment, always in feeling.

When London went to lunch there must have been many luncheons close replicas of mine—luncheons with discussions about what this would mean to Germany or that to us; discussions more giddy than usual, stimulated by rather more wine, with the Kaiser and Hindy and Tirpy and Ludy bobbing up in them like apples in a warm, spicy posset; conversations almost entirely inane, childish, but pleasant. The company I was with being well-to-do,

the word "Bolshevism" also recurred, a name for a thing like the fog now at the window. For the room grew dingier and darker, the fire redder and redder, and the windows as brown as transparent brown paper, through which could be seen the black, dripping branches of trees. But the fire was ruddy and warm. It would not be bad after all to end nodding over a pailful of coke, guarding tools with a sack on one's shoulders; not so bad, at least so it seemed when in each of us was a glow that the infection of public rejoicing could turn to a blaze. We had all become shadows where we sat—just shadows, each with three points of light, two eyes, and one spark of a cigarette. Someone, with whimsical solemnity, thought fit to pour on my head a small libation of wine. I was thinking this was the last armchair I had sat in before going to France—what years, what ages ago! Time! Time?—yes, of course Time like an ever-rolling stream bears all its sons away—"I must be off."

The park was empty; the paths were shining wet; I walked in a bubble of mist. It was a No-man's-land of ghosts; not of the ghosts I would fain have talked to, who still look wondrous like themselves, but of wispy, whimpering ghosts, anonymous ghosts—multitudes of them. And yet on the other side of No-man's-land I ran into a crowd, streaming home as from the Derby! Such a jolly crowd, every man and woman of which had apparently backed the winner! Then (for me), tea and exclamations: exclamations of whose banality it was impossible that day to tire: "Isn't it marvellous? Isn't it *incredible*? Isn't it. . . ." but words break down in gestures. It was pleasant to savour thus the inexhaustible obvious; but it was to the night I looked forward.

To set out with the expectations of a child at a pantomime, but never to be sure if the curtain had

actually risen, whether or not what you saw might not prove to be only a drop scene ; to push on and on, to wander hither and thither, in search of the spectacle, and then to discover that you, in virtue of being one of thousands and thousands, you just doing that, *were* the show—such in barest analysis was the night's experience. To become as a currant in a vast human plum-pudding, gaily bedecked, danced round by the flames of harmless good spirits and offered up at the table of the *Padre Eterno*, serves, as metaphors will, to bring back its sensations. A great gregarious good-humour was abroad, a solid fraternal satisfaction. It softened and made friendly-pathetic the squeakiest, thinnest, most self-assertive monotonous manifestations of joy. How inexpressive a creature is man ! Left to himself, without the help of art, which he despises, he can only kick up behind and before, scream, "Ow-yow, tiddle-diddle-ooo !" and change hats with his female.

On November 11th they said "We are so happy ! We will show it and romp." They did, and were happier still. On November 12th they said, "We were so happy last night ! We must romp again." They made gestures more violent, lit fires, knocked hats off and charged each other in the streets. Were they happy ? Perhaps. But I know I came between two men, facing each other, with the sulky semi-consciousness of bulls in their eyes, and with split lips and dripping noses. On November 13th they said, "We must pump up jollity to the last dregs of all." They rushed about dragging cannon to batter in doors of hotels, tore clothes off the backs of women, and tied one, it is said, to a lamp-post and danced round her. I deduce that they were not nearly so happy.

Unshaded street-lamps and lit windows, long unlighted, were enough that night in our eyes to

make a glorious illumination. Piccadilly was a ball-room, where strangers ran at each other with a cry, hugged, took the floor, and twirled and jigged to no music, or only that kind which from earliest ages has been famed for keeping off devils.

We did miss a band. I met only one, it was a Belgian military band, travelling inside a 'bus. Behind the quivering windows they were blowing and banging it out, their energetic faces looking like dashing portraits by Franz Hals; while from the top of the 'bus men in steel hats and blue-grey coats leant, shouting, shaking hands with the air. Trafalgar Square was more sombre; processions of munition chits with flags trailed about, singing nasally, lazily, sometimes jeering and laughing at passers-by. A great revolving crowd of black loiterers sat about, ran about—did nothing, did anything—as happy and easily-distracted as dogs. The door of St. Martin's Church was open; there was a thanksgiving service going on. The quavering, throbbing and whining of the organ, and the people at the foot of the portico steps dancing "Nuts and May", harmonized into a single appeal which made me feel I should like to go in, sit still and remember. Pews, a slightly foggy atmosphere, bright lights and soporific warmth—how familiar it all was! The service was composed of hymns and improvised prayers; the former were rather lugubriously triumphant, the latter moving because spoken naturally. We prayed for many kinds of people: the dead, the bereaved, the wounded, the saved, the relieved, for statesmen and Christians and reformers. I waited for the clergyman to tell us also to pray for our enemies; he was, I thought, the sort of man who might. But he did not. At the close we sang, "God save the King," and fixing my eyes upon the Lion and Unicorn above the altar, whereon stood a small brass cross, my

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thoughts turned to "a highly respectable First Cause," whose views on Alsace and the Suez Canal were sensible and positive. Then I was once more absorbed into the paganism outside.

And so home, through the streets which were easy to traverse in the wake of charging wedges of humanity, among people who laughed when they were jostled, on into the quiet West, where the houses were dark, and dusky flags hung limply from the windows, as though in dumb show saying "It is finished."

DIGRESSIONS OF A REVIEWER

YOUTH AND LOVE

I HAVE just been reading Cobden-Sanderson's Journal; the charm of the earlier pages is that the moods which they record are those of a young man not yet by any means used to life. Reading them brought back my early twenties to me. Others, too, will recognize these humiliations, self-reproaches, and moments of superb superiority, which are characteristic of a youth who does not know whether he is truest to himself when he is bone-idle, or when he turns to some distasteful work. He only knows that he is a most unsatisfactory person, though blessed with visions compared with which a career or a cause seems of slight value. He suspects that he is a muff and a waster, and as often that he is a poet, only—unfortunately, and as it were, accidentally—an inarticulate one. Still, what does incapacity to communicate matter at those times when he knows himself to be so happy a combination of seer and saint, and life lies spread like a map before him? Feeling, vision, are the important things.

And yet it does matter, matter very much, when he must descend from the mountain or cannot find his way up. How enviable, how admirable, then, do those appear who are not (surely *they* cannot be?) blessed with such "openings"; those whose thoughts never tempt them to understand Creation, but who, on the contrary, with modest resolution settle down to their jobs—marry, get on, get something (damnable, suspect, honourable word!) at any rate *done*.

Then woman comes on the scene, a complication, a solution ; half disastrous compromise, half rocket of salvation. One of the most exasperating yet charming things about her is that she seems naturally more at home in the world. To her it is all simple and glorious, if . . . of course there are "ifs." They are the important things to tackle, and it is up to him to do it.

When she first appears she is only part of the general field of contemplation, a feature in that fresh delightful region upon which he is too often tempted to dwell when he should be raking the wide horizons. But once on the height, how small a part she seems of all that really matters ; strangely delightful, but still how small a part—till things go wrong between them—then, to his dismay, he discovers that she is essential, and that thinkers are not detached. During the days which follow, visibility is very bad from the heights. Ah, how preferable was friendship ! But, since she is essential, she must understand what is greatest in him ; and at this point begins what may prove love's sweetest or bitterest comedy. She must understand that most valued, yet perhaps dubious, side of him, or how can she be comparable to a friend ? If one of them at least has not humility, Heaven help them both !

THE PEERAGE

A NEW edition of that useful and entertaining work, *Burke's Peerage*, has recently appeared. It is a book to be dipped into rather than read from cover to cover. When I turn these crowded pages I am reminded again, as I am whenever I try to get on a six o'clock 'bus in the Strand, that I am, at heart, a Malthusian. There are too many people in the streets, too many in the peerage. The population question is the one question on which I *cannot* see the other side. Every bachelor, every spinster, is in my eyes, *ipso facto*, a martyr in the cause of humanity, for to have children of one's own is a source of happiness. I would, if I were king, even at the risk of cheapening a little further that honour, give them each an O.B.E. We shall never be happy, kind and sensible, till we are less thick upon this planet. We shall never have a civilisation of which we can be proud, never a State which we can each feel is a greater self, until the newspapers can report, with pardonable exaggeration as a most significant event, that "a vast concourse of over five hundred people assembled to support the policy of the Government."

There are even too many peers. The eighty-first edition of Burke has convinced me of this. It has 2,789 pages; the first edition published in 1826 had 400. To each name a number is attached, representing the precedence to which that person is entitled. However large your dinner party, the King, of course, goes in first; but I have failed to discover who, if you invited the whole peerage,

would go in last. Mrs. W. H. Williamson, I know, goes in 160,089th. I have not carried my researches further.

The interest of this great book, which satirists in their bitter way used to call the Englishman's Bible, is various. First and foremost it appeals to genealogists. Ancestor-worship is a passion of maturity. The young rarely have it, but it often breaks out in later life in people who were once extremely bored by discussions as to who was so-and-so's great-great-aunt. Another source of interest is looking up the real ages, when they are given, of ladies who give the impression of only having left the schoolroom a year or two ago. Then for those with literary sensibilities, there is pleasure derivable from the magnificent massing of high-sounding and glorious titles in the person of one man. This always gives me a thrill. The owners of multiple titles ought never to be announced by only one of them. I should like to hear, for instance, a butler roll out the words:—"The Duke of Hamilton, of Brandon, of Chatelherault; the Marquess of Douglas and of Clydesdale, the Earl of Angus, of Arran, of Lanark and of Selkirk; Lord Avon, Lord Polmont, Lord Machanshire, Lord Innerdale, Lord Abernethy, Lord Jedburgh, Lord Daer, Lord Shortcleuch and Lord Dutton"; and then—instead of a crowd of grandees, see a solitary unassuming gentleman, perhaps with a mother-of-pearl stud in his shirt-front, enter the room. It would appeal to my dramatic sense.

As the peerage and baronetage is so large now, I have decided to be unmoved by any title which is post-Waterloo. This increases my natural respect for the remnant.

ELOQUENCE

I DO not know who coined the phrase "verbal imagination"; eloquence is one of the gifts of nearly every great poet, and eloquence is so astounding a faculty that, in its perfection, it can even make a poet, without other gifts, resemble a great one. Shakespeare undoubtedly had it, but in him it was subordinate. Victor Hugo had it, and in him, though it did not stand in the stead of imagination, it was a dominant faculty. His style was a rushing torrent of condensed vivid images and apocalyptic epigrams. The marvel of it was the way in which one metaphor grew perpetually out of another. In Swinburne's poetry too (no wonder he admired Victor Hugo), we are both exhilarated and fatigued by this miracle of the inexhaustible bottle. At first it seems a marvel that these poets can go on so long; soon—that they should ever stop. Both poets are in pursuit of an unending crescendo; and, like Wagner in music, they reach so early what, it seems, must be the emotional climax, that you are astounded they should be able to proceed at all. Yet on they go. To continue to rise ever higher and higher may be impossible, but they seldom flag.

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HENLEY

HENLEY as a critic constantly surprises me. He writes like a man from whom one does not expect justice : with defiance, with pride in his prejudices. Yet when you examine his work, you are impressed on the whole by its fairness. He mounts the judgment-seat with the airs of one who does not pretend to be impartial ; but his speech is a speech from the bench. He delivers himself with the gestures of an advocate, but in substance his address is more judicial than you had foreseen. Again, he writes with the determination to be trenchant and picturesque ; he loathes tame statement. You expect him therefore to be slap-dash and inaccurate ; he turns out to be learned and painstaking. Painsstaking passion is his note as a critic.

CREDIT OF WORDS

THE credit of words depends upon the prestige of writers who use them, and therefore it is up to (do you deplore that expression ?) careful writers to adopt useful words and phrases which have kept bad company. "Sense" used as a verb, meaning to apprehend vaguely, is a vivid word: "they met, and he instantly sensed an enemy"; "view-point" can be useful, too, especially when "point of view" would introduce another "of" into the sentence. We should overcome reluctance to accept English compounds, for we feel no such aversion from learned foreign ones. "Airman" has at last ousted "aeronaut," and "hand-book" was once thought vulgar.

INVECTIVE

THE late Lord Morley, when he was editing the *Pall Mall*, was amused by a young journalist who, when asked his particular line, replied "Invective." "Invective? May I ask against what?" "Oh . . . anything—general invective." One recognizes that impartial faculty for getting angry. It can produce sneers, tropes, tremendous metaphors; out of it some pages of memorable prose have been written. Such anger is delicious to experience, for it is accompanied by a glowing sense of superiority, and it can be an immense stimulus to composition. But it can only be cultivated at the sacrifice of some spiritual honesty: that is the price which must be paid. Success depends upon rapidly draining into general channels the contents of your private reservoir of resentments, vainglory, thwarted ambitions, wrongs and grudges. Such emotions are ductile. It is particularly easy to make, for instance, a little current of envy turn furiously the mills of righteous indignation. But then the writer must be unconscious of the sources of this energy. Hence the necessity of a certain dishonesty or lack of self-awareness which, whether inborn or acquired, may sooner or later make a fool of the specialist in invective.

Again, invective which has become a habit is apt, like charm, to lose its virtue, for both depend for their effectiveness on spontaneity. Personal charm which has been extravagantly used for personal ends, from winning hearts to securing corner seats in railway carriages, in time grows

blowsy. It gradually loses the brave delicacy and sweet candour proper to it, though its possessor may be quite unaware that this is happening. In the same way the adept at invective does not notice when something has crept into his style which makes it ineffective. His attack may still amuse, even impress the detached reader, but it has become incapable of giving pain to the victim, which is its proper end. A self-delighting exuberance in animosity, a too obvious contentment in the sleek sarcastic phrase, actually bring balm to the wounds which deadly statements ought to inflict. The victim is relieved by observing that the writer is licking the chops of his own malice, and executing a war-dance instead of thrusting at the vitals of his enemy.

Swinburne was master of a glorious exuberant invective, but I doubt if his fiercest tirades gave much pain even to Dr. Furnivall or Robert Buchanan. The first effect of his "Under the Microscope" is to convince the reader that it must have been immense fun to write it; he is sure that the author, after giving rein to his emotions, must have enjoyed a sunset-calm of mind. This, of course, is fatal to the proper purpose of invective.

JOURNALISTS

JOURNALISTS often write in each other's company at the same table or in the same room, and I, a journalist with a hitching pen, have thus had chances of studying the human countenance during the stress of composition. The face of one engaged in writing is seldom cheerful. Clutton-Brock, whom I love to remember, wrote in rapid spurts with brief pauses. He looked worried but eager—a terrier watching a rat-hole, you would have said. He wrote close, not on alternate lines; for, happy journalist, his sentences came from him in the right order. Between the spurts, if he looked up and caught upon my face that foolish blankness which accompanies search for the elusive word, his lips would part, his eyes and white teeth shine at me for a moment, and he would nod encouragingly—perhaps whisper softly the word “Garbage” (Authors, when they meet at parties, speak of each other's work in tones of melancholy reverence, but it is not thus we treat each other in Fleet Street). Sometimes “Y. Y.” came up to finish his essay in my room. It was a sign that he was behindhand with his copy. Now, though the charm of his writing is that of effortless and cheerful communication, his aspect at such moments was that of a harrowed solitary whose life has never been visited by a ray of sunshine. I have watched Bernard Shaw writing amid chatter in the hall of an hotel. He sat collected, still—no fakir more self-withdrawn; but what he was writing read next day like the words of one gesticulating on

a platform in an ecstasy of humorous exposition. Hilaire Belloc will bend over verses of towering extravagance a visage charged with resolve to resist to the uttermost and the last. Maurice Baring, whose ideas out-race the most illegible pencil, and after whom typewriters hammer in vain, wears in the act of writing an expression of agitated resignation. Indeed, the only thoroughly cheerful countenance I have seen opposite me under these conditions was that of G. K. C. in his youth. His script was as leisurely as a fair copy. Never hastening, never stopping, but with gurgles of delight, he would cover the requisite number of pages. His hand never moved from the paper ; he finished in a surprisingly, in an enviably, short time.

Now peep into a little room the other side of my landing. . . Do not reproach me for indelicacy. It was not a condemned cell I callously bade you enter. The man you saw within, gazing so wistfully at a patch of sky, was a leader-writer, one who had just triumphantly hit one nail on the head, and was about, with a deft tap, to drive in another. Indeed, if you judged journalists by their expression during composition, you might form too dismal an estimate of their profession. It is not so bad. It allows more freedom to impulse (a most important element in a happy life), and it encourages a greater variety of interests, than most professions. Of course, it has its drawbacks, among which I count as serious that of not providing pensions for the old and tired. Sooner or later I shall have to seek another calling ; I have my eye on it.

I shall open a School for those who write Letters to the Papers—so many newspaper correspondents are apparently unacquainted with the guiding principles of this art. Men write letters to the papers for various reasons ; to further

causes, to advertise themselves, to display their knowledge, to correct other people's facts, to rebut their arguments, to apologize, to give pain, to appeal for money, to flatter, to thank, to report whatever has startled, pleased, interested or disgusted them, or—because they have nothing else to do. In each case the motive of the letter should decide the manner of it. The writer should first be clear, not only about his own motives, but about the view the public are likely to take of himself in relation to the matter in hand. This is a fundamental condition of writing a good letter to the papers. You would think this was generally understood. It is not.

One of the disappointments which Lord Oxford met with during the last few years of his life was his defeat as a candidate for the Chancellorship of Oxford University. It was an honour he coveted, and it would have been an appropriate one. He was defeated by Lord Cave, who thereupon wrote to *The Times* a letter which badly needed revision. Lord Cave's ostensible motive was to thank those who had successfully supported his candidature. Nothing could be more gracious. Yet it was not a good or a gracious letter that he wrote. By way of stimulating future business, I will make a few comments upon it, showing how useful, even to the eminent, my School will be.

"SIR, — Now that the election for the Chancellorship of the University of Oxford is over, will you permit me to express through you my thanks to those who gave me their support ?

"My candidature was not proposed or supported by any political organization. The appeal to accept nomination came to me from heads of colleges, professors, and other leaders of Oxford thought—and in such terms that no man could

JOURNALISTS

have rejected the appeal who was not prepared to put his personal inclinations and love of ease above the opportunity of public service ; and the subsequent arrangements were in the hands of a small body of resident graduates, assisted only by a few friends in London. They were handicapped by the delay in nominating me and by the acknowledged pre-eminence of my distinguished opponent ; and I shall always remember with pride and gratitude the confidence and consideration which in these circumstances they were good enough to extend to me.

“For myself, I will only add that, while I cannot hope to be so good a Chancellor as Lord Curzon—who always seemed to me to be the ideal holder of that historic office—I desire nothing so much as this, that I may be able in my time to render some service, however small, to my beloved University. —Yours faithfully,

Cave.

House of Lords, S.W.1, July 3.

The first sentence is a trifle pompous, but otherwise no exception can be taken to it ; and the last paragraph is appropriate. In the first sentence Lord Cave fulfils his ostensible object in writing to the papers, he thanks his supporters ; in the last he expresses with becoming modesty the zeal with which he enters upon his “historic office.” Had all the rest of the letter between these two paragraphs been deleted the result would have been quite suitable. In its present form it would undoubtedly have been returned to him, had it been submitted to the School. But we should, of course, have had to explain to Lord Cave the drastic excision of what he wanted to say. Some bluntness would have been necessary. We should have justified the cut on the ground that the body of

his letter showed first an incomplete awareness of his own position, and secondly, a complete unawareness of the general view taken of his relation to the matter in hand—namely, his success in competition with a distinguished ex-Prime Minister (all Prime Ministers are not distinguished) also remarkable for those very qualities of mind which a University honours.

The public, it is true, was not surprised at Lord Cave's election, since it knows that appointment to this honourable office is almost always determined by political loyalties ; and when voting-day had been fixed so as to suit the clergy and inconvenience two-thirds of the electorate, the result was certain. Thus in the general view, Lord Cave, whose chief claim to intellectual distinction rested on his being a successful conveyancer, was in the rather uncomfortable position of having beaten the obviously better man. In such circumstances silence is always golden. But silent he could not be. Instead, he devoted (as you see) the greater part of a *letter of thanks* to suggesting that politics had nothing to do with his triumph, and that his victory would have been even more overwhelming had there not been delay in nominating him !

We should never have allowed him to make this mistake ; nor should we have permitted him to state that only the victory of his unselfish devotion to public service over his " personal inclinations and love of ease," had enabled him to stand in the first instance. The Chinese have a proverb, " A red-nosed man may be teetotaller, but no one will believe it." The world is cynical, perhaps too cynical, in judging human nature, but the writer to the papers must take that into account. The public could not well believe, even if it happened to be true, that an energetic and successful lawyer was indifferent to a great but not arduous post

which, in normal circumstances, it would have been unreasonable on his part to hope to win. Besides, it is always ungracious to accept the windfalls of fortune with a too dutiful smile. From such howlers we could have saved him. That *The School for Press Correspondents* is wanted and will acquire a good clientele I no longer doubt.

PAIN

I HAVE lately experienced a sensation I had quite forgotten—pain, and once more I have almost forgotten what it is like. How odd that so unique and overwhelming a sensation should leave so vague a recollection ! It is not perhaps surprising that very acute pain should be irrecoverable by the imagination, for it disintegrates the personality. It is a delirium, and destroys the world. But a pain one can manage, a simple, stale, grinding ache, varied by hot shoots—a pain like that ought, I should have imagined, to have left behind it a clear impression. Yet I have to pinch my injured limb to convince myself that such a feeling exists.

It is a habit of mine to examine whatever happens to me and to squeeze a little information out of it, though why I do this I hardly know. Now from my recent experience the conclusion I have drawn is that boredom is a large part of the total unpleasantness of moderate pain. Pain (I am not speaking of extreme pain) is the most *boring* thing in the world. Though the sensation itself is utterly unworthy of serious or of prolonged attention, while we are feeling it we cannot attend to anything else. It is abominably monotonous. At first sight it is some slight alleviation to watch the pain carefully, for what seemed a homogeneous sensation turns out to be a composite one. It has a rhythm in it—a crescendo, a sparkle or twist of greater acuteness, a diminuendo : “ Here we go up, up—Ah !—Now we go down, down, down.”

P A I N

Imagine watching so simple a phenomenon hour after hour ! It is intolerable, an outrage. Yet you can't get away from it ; you are a slave. If you violently wrench your mind away and clamp it upon something else—a thought, a bottle, a flower by your bedside, you pay for the little outing. Very soon you feel the tug of the chain, and back your mind must come to this boring, empty thing. And you will be punished, too, for having distracted yourself ; for you will fear, when you attend to it again, that the pain has meanwhile become worse, that it is getting worse. And when fear enters your soul, then you are in a bad way.

HANDY WORDS

DURING the war a pretty word for a girl came into general use ; a soldier would speak of her as his "bird." It was an old expression. I came across an earlier revival of it in a poem by Thomas Campbell :—

And by my word, the bonny bird
In danger shall not tarry.

Such slang words often have better pedigrees than correct ones ; "bilk " for instance, was used both by Spenser and by Dryden ; and "snag " and "squelch " are good English, and so is "swank," in the sense of hale and hearty. Burns uses it. In the matter of words we are sitting upon a chest of fine old coins, complaining of our poverty, and yet never attempting to pass them. If one or two ever get into currency it is thanks to gay, illiterate persons without pretence to education, who love a vigorous word. We literates trade with greasy paper-money, and coffer up neglected gold. What a charmingly expressive word for a retiring, absent person the adjective "yonderly " is, for example—a yonderly man ! "Mim," meaning prudishly or very discreetly silent, is another word I should like revived as a feminine refinement upon "mum." It survives only in that nursery rhyme which used to be sung to some of us while we were jogged on the knee :—

To market ride the gentlemen,
So do we, so do we,

Then comes the country clown,
Hobbledy gee !

First go the ladies, mim, mim, mim ;
Next come the gentlemen, trim, trim, trim ;
Then comes the country clown,
Gallop a trot, trot, trot.

I want "Scritch," too, as well as "Screech" ; it suggests a more subtle sound. Coleridge, by the bye, revived it,

Perhaps it is the owlet's scritch,
Or what can ail the mastiff bitch ?

A "Moonflaw"—meaning a wild, lunatic fancy—and "Moonling"—"I have a husband and a two-legged one, but such a moonling"—are both, as Polonius would have said, "good." Then there are all the old compounds beginning with "mis" which we have allowed to drop out of use. We "misgovern," "misprint," "mislead," but what a handy word we neglect in "mislike," which, being less positive than "dislike," expresses a common shade of aversion. I like the word "to gowl," too, which means to weep from rage or spite ; it is a fine sulky word.

BORROW AND BELLOC

IF ever a man succeeded in getting himself into his books it was Borrow—and a queer self it was. He has the art of riveting our attention upon it. He is as circumstantial as Defoe, yet he prepares his effects theatrically; he is full of mystifications, and yet he is open; he jumbles together the matter-of-fact and the romantic in a narrative only credible because all these things are happening to *him*. To such a man, you say as you read, any adventures might happen; with such a traveller any conversation might take a fantastic turn. You cannot think him truthful; yet you surrender your notions of probability. He moves through life an heroic figure to himself, and anything—a tinker, a gipsy, a pedant, a pedlar of Bibles—to his chance-met acquaintances. The irony of the contrast is a luscious delight to him, and that delight is shared by his readers, whom he is most careful to let into the magnificent secret. He flourishes a robust common sense in your face; yet what attracts him most is mysterious. He is an intense egoist; yet he perceives everyone he meets to be unique and interesting. He takes his readers into familiar country and also into a world of marvels such as nature-lovers never see. There were deep pits in his temperament; this swashbuckler was subject to agonies of fear. In *Lavengro* he apostrophizes his sacred terror thus.

“Oh how dare I mention the dark feeling of mysterious dread which comes over the mind, and which the lamp of reason, though burning bright

the while, is unable to dispel ! Art thou, as leeches say, the concomitant of disease—the result of shattered nerves ? Nay, rather the principle of woe itself, the fountain head of all sorrow co-existent with man, whose influence he feels when yet unborn, and whose workings he testifies with his earliest cries, when, ‘drowned in tears,’ he first beholds the light ; for, as the sparks fly upwards, so is man born to trouble, and woe doth he bring with him into the world, even thyself, dark one, terrible one, causeless, unbegotten, without a father. Oh, how unfrequently dost thou break down the barriers which divide thee from the poor soul of man, and overcast its sunshine with thy gloomy shadow ! In the brightest days of prosperity—in the midst of health and wealth—how sentient is the poor human creature of thy neighbourhood ! how instinctively aware that the flood-gates of horror may be cast open, and the dark stream engulf him for ever and ever ! Then is it not lawful for man to exclaim, ‘Better that I had never been born !’ Fool, for thyself thou wast not born, but to fulfil the inscrutable decrees of thy Creator ; and how dost thou know that this dark principle is not, after all, thy best friend ; that it is not that which tempers the whole mass of thy corruption ? It may be, for what thou knowest, the mother of wisdom, and of great works ; it is the dread of the horror of the night, that makes the pilgrim hasten on his way. When thou feelest it nigh, let thy safety word be ‘Onward’ ; if thou tarry, thou art overwhelmed. Courage ! build great works—’tis urging thee—it is ever nearest the favourites of God—the fool knows little of it. Thou wouldst be joyous, wouldst thou ? then be a fool. What great work was ever the result of joy, the puny one ? Who have been the wise ones, the mighty ones, the conquering ones of this earth ? the joyous ?

I believe not. The fool is happy, or comparatively so—certainly the least sorrowful, but he is still a fool; and whose notes are sweetest, those of the nightingale, or of the silly lark?"

It is impossible to say what his books are about; but to read them is to enjoy an outing from civilization and convention, and in the company of an erratic, learned, solitary, sociable companion whom—though he talks to you frankly and incessantly—you understand almost as little at the end of the journey as you did at the beginning.

There is one modern book which, though it has not the same flavour as Borrow's books, will, I think, take the same kind of place in literature,—*The Path to Rome*; and to read it is also to enjoy an invigorating spiritual and physical outing. Just as Roman Catholics enjoy Borrow in spite of his aggressive No-Popery, so Protestants can enjoy *The Path to Rome* in spite of its militant Catholicism. Belloc, too, has the power of riveting attention on himself and yet remaining enigmatic. His book is as full of fine writing and courageous gusto—of descriptions and energetic reflections. Also it is full of good stories, including the immortal one of the Duke of Sussex, the Engineer, and the simple-minded Frenchman, wherein is discovered the correct theory of the Simple Human Sense of Authority.

CONVIVIALITY

I WAS never "a gay young dog," though I will not go so far as to boast that I was, at any time, capable of pronouncing the most famous restaurant in the Strand "Roman-o's," as Sir John Simon once did in Court, thus unconsciously testifying to an exceptionally well-spent youth. I have always had friends among the race of "gay young dogs," and I have thought it particularly amiable of them to tolerate me, so few were the good points we had in common. I have envied, without attaining, the grace of unconscious candour which is their prime virtue; but I never could contribute to festive hours anything more positive than benignity. It is almost impossible for me to get drunk, though it is true that on a few occasions in my life, after an Alice in Wonderland dinner-party, I have had to jump into my bed as it passed my corner of the room; but the seat of reason has never been shaken, neither has memory been disturbed. This characteristic disqualifies one from sharing the pleasures of rampageous conviviality, which depend upon complete self-forgetfulness.

CENTENARIES

THE custom of observing literary centenaries is growing. It is a sign of the large number of literary journalists there are about, and of the attitude of editors and the public towards literature. It is hard to place a literary article if there is not some pretext for presenting it to the public. There is no reason why people should be more inclined to read Crabbe or Chaucer on an anniversary,—and they do not ; but if an article can begin, “ Last Thursday two hundred years ago Cowper was born,” that apparently removes a feeling of impatience which editors dread in the public when they are addressed on topics which have no pretence to be burning. In 1921 I showed up an article beginning “ A hundred and twenty-one years ago the poet Cowper died,” but the formula had no magic in it. I saw I should have to wait ten years before I could triumphantly begin “ Two hundred years ago the poet Cowper was born,”—and be printed.

SENTIMENT

OUR contemporaries are down on bad sentiment, but lenient toward poor humour, which is really as contemptible and for much the same reason. You can win nowadays quite a respectable reputation if you “run about the city grinning like a dog,” but if you shed a few easy tears you are thought an ass. Consider how Sterne with his Maria, his dead donkey and his Le Fever would be despised if he were writing now. He escapes censure only because we do not choose to believe he took his sentiment seriously; he is so clever, and so clever in a way that suits our taste, that we refuse to believe he was not ironical in such passages, though anyone with an historic sense knows he thought them highly becoming and exquisite.

CHURTON COLLINS

I HAVE been reading Churton Collins' "Illustrations of Tennyson," an investigation into the sources from which the poet drew inspiration. It is an amazing product of scholarship and memory. What learning! one exclaims as one reads it, and—with greater astonishment—What a memory! For Churton Collins belonged to the old school of bookmen who carried their knowledge about with them, not to the type of the latter-day literary man, who is unable to quote fifty consecutive lines of Homer or Shakespeare, but keeps his erudition on his shelves. I do not mean to insinuate that he does not know what is inside his books, he does; but when he comes to writing he is helpless without his library. Now, "Illustrations of Tennyson" is a book which could have only been written by a man whose library was in his head.

Churton Collins had a magnificent verbal memory. As he read Tennyson, he recalled all the passages he had ever come across in Latin, Greek, Italian, French or German literature which resembled the poet's thoughts, similes or phrases. He evidently remembered, too, where such parallel passages occurred, so that he could verify them. The result was a book which is an anthology of a rare kind, full of beautiful fragments from the world's literature, some of them taken from far-out-of-the-way sources.

The results were not pleasing to the poet. He did not like appearing, to use his own simile, as

A full-cell'd honeycomb of eloquence
 Stor'd from all flowers.

"It is the business of critical justice," said Johnson, "to give every bird of the Muses his proper feather," and Churton Collins had attended to the business so thoroughly that Tennyson felt like a plucked eagle. His critic had shown how deeply indebted he had been to earlier poets, especially to the ancients and even to the obscurer classics. The number of imitations, analogies, adaptations and straight transferences which Collins noted is astonishing. The poet was often shown to have improved immensely what he had borrowed, even in the case of Homer; but neither this admission nor a most respectful preface propitiated Tennyson, who was not content to be compared even with an enchanted island—if the point of the comparison lay in his being *full of echoes* as well as of

"Sounds and sweet airs, that give delight."

I infer that it was after the publication of this book, not in defence of Gosse, that Tennyson growled out, when Churton Collins' name was mentioned: "He's a louse in the locks of literature."

EMERSON

I KNOW many who will at once turn over any page on which the name of Emerson occurs. His tender idealism, the benign didactic loftiness of his tone, that serenity which smiles upon evil as "undeveloped good" and passes over difficulties, are miles away from prevalent moods. There is no great Victorian preacher on whose behalf it would be more hopeless to start a cult; indeed, any critic who lights Emerson's candle now is in danger of extinguishing his own. But what do our little dips matter? One thing is certain: Emerson wrote so well that he will reappear before other courts for judgment. His philosophy may seem to this generation mere philomory; his candid detachment irritating; his purity too crystalline to be true; his culture the kind most irritating to modern artists:—

In the room the women come and go
Talking of Michelangelo—

his pretty fancies (butterflies incased in little glittering blocks of ice) at once too intellectual and too homely to merit admiration; yet return he must. Such is the reward of writing well. Style alone gives this privilege of appealing from one generation to another, of winning fresh hearing for ideas though they have been repeatedly turned down.

BOSH

THERE are books which belong entirely to that day-dream world into which it is often restful to nestle down, away from reality—and away from literature. For literature and indeed genuine art in any form, even when its theme is most remote from reality, has an odd way of seeming real—of making us feel more alive. We do not turn to it when we want to fade out.

Anyone with the habit of self-observation, when searching his shelves, must have often caught himself avoiding not only masterpieces, but even the works of any writer who has a position in literature. There are moods when we want to read bosh. With some people this is the only mood in which they ever open a book, and this is their misfortune; but we all feel that there is not as much first-rate bosh as we want. The supply of second-rate and third-rate is almost unlimited, but first-rate bosh is nearly as rare as a masterpiece. The purveyors of it therefore deserve very well of mankind. Next to the writers who have created beauty, and fired and renewed our love of it, or have recorded their own sense of the meaning of life, next to these, the prime entertainers should be ranked as benefactors of mankind. They are always handsomely rewarded as far as money is concerned, but they are too little esteemed. A fairer sense of proportion would give them more respect than the majority of the almost-artists, for they provide something which men genuinely need.

There is a type of reader who puts any book which aims at merit of a serious kind above rubbish, and despises rubbish, even when it is as good as *Sherlock Holmes*. For my part, I think it fair (and possible) to be as critical of bosh as of literature. It is no use comparing them, because the test is different, but each within its own category can be as rigorously tested. *War and Peace* is a stupendous work of art, though it has faults which any one can see; *Sherlock Holmes* is first-rate bosh, though it also has faults any one can see, but it is — well, first-rate bosh.

POPULAR WRITERS

I DO not think popular taste has deteriorated. The best modern writers do not appeal to that taste, partly because there are so many half-good writers successfully competing with them to satisfy it ; partly, too, because the best authors of to-day do not happen to possess the splendid though popular qualities of Scott and Dickens, but different ones. Lord Rosebery once said that the stamp of merit on a book was "the thumb-mark of the artisan." He ought not to have said anything so sycophantic. Popular taste is a good judge of creative power on a huge scale, of what is exciting and of what is human, but it is very dense in all other matters, and it likes barefaced imitations of the qualities it understands as much as those qualities themselves. The great majority are more easily taken in than the over-refined ; nor are they so easily scared out of their mistakes.

There are silly books which run through the rabble of readers, devouring their hundreds of thousands. We are told that the victims of these books love Shakespeare. Would they, I wonder, if he were not the best advertised of all authors living or dead ?

Another point: if you want to learn to write well, it is often more practical to turn, not to the masters, but to the popular writers. The contrast is so instructive between the way they let themselves go, splurging and splashing about, piling it on and spoiling their effects, and the way that on rarer occasions they put down the perfect statement

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and leave it. In the stories of careful, conscious writers everything is apt to be so evenly well-done that it is hard to discriminate between what is necessary and what is not.

From the barbarians one learns also that it is above all important to be really excited oneself by whatever one is describing.

If I were in charge of an Academy for Literary Failures, part of the curriculum would be to make newcomers prune, without destroying, stories by writers of good bosh. It would be no use to start by choosing, say, a story by Turgenev as a model, and telling them to imitate its economy, delicacy and balance.

THE SENSE OF SECURITY

I NEVER know whether to damn the age or to praise it : I can't marshal the data. Many people, however, appear to have little difficulty in doing so, and in concluding that the twentieth century is damnable and decrepit. Many of these obviously start by idealizing the past. It is rare, of course, to find anyone glorifying their own times ; and there are few periods in history which wear a cheerful self-satisfied aspect. The age of Elizabeth, which shines so gloriously in our eyes, was eaten up with remorse and self-contempt—an ugly, thrusting, vulgar, cruel muddle it seemed to the Elizabethans themselves. But the age of Queen Anne was, I think, a fairly self-satisfied age ; and so, indeed, was all the first half of the eighteenth century. Men thought themselves rational—and, on the whole, they were justified. Of course, they did not consider that they were men of a noble stature compared with the race they invented and called “ the Romans ” ; still, when they compared themselves with their ancestors, Elizabethan or mediæval, they were satisfied. Then in the middle of the Victorian era people were again, on the whole, pleased with the way they were getting on. Of course, there were grouseurs who pointed at the ghastly condition of the slaves of the manufacturers, or at the massive stupidity of the middle and upper classes ; but there was a lot of hope in the air. Men believed they were at bottom good and wise ; barbarism was over ; all that civilization wanted was to be cautiously and gradually

tidied-up, and then it would progress from triumph to triumph. They had stopped writing coarse books; they had eschewed duelling and cock-fighting; virtue and getting-on in life were widely respected; they were daily growing richer, and men of science were doing wonderful things. Only the abnormally timid dreamt of serious upheavals. Indeed, the sense of security was so powerful an ingredient in the social atmosphere that those who have been brought up, even within whiff of it, have been unable to reconcile themselves to post-war conditions.

MODERN POETRY

THERE are fashions in poetry. These fashions are strong modes of feeling, and it is impossible for the sensibility of a contemporary not to be coloured by them, unless he confines his reading to the poetry of the past. The leading fashion in poetry is now tolerant of obscurity to a degree unwarranted by examination of the poetry which mankind has seen fit to treasure down the ages. Modern poets are apt to be mannered and subtle in the expression of emotion to a pitch exceeding even the seventeenth century. Dread of the commonplace, lack of faith in common ideas and moral values, have driven them back upon idiosyncratic associations and subjective themes; upon shivers of queer disillusionment—*Hi ! Hi ! Hi ! les amants bizarres*—upon sudden mystic exaltations, meaningless in any philosophic sense, or upon attempts to create a childish wonder-world out of an odd collocation of images. Like other fashions this one will soon pass.

THE SOCIAL ENEMY

NO one loves Liberty who fears Licence ; so far as I know this is an original aphorism.

Such lovers of liberty are intolerant only of intolerance, and the only kind of moral indignation they permit is that directed against moral indignation ; in this they revel. This general attitude is instantly sympathetic to me.

The Enemy is an active spirit which animates certain, often capable, and nearly always unfortunately, self-assertive people. It is best suggested by an example. I will take a quotation from Mr. Haynes' "A Lawyer's Note Book."

"He only wished to add that he could not concur in the reason given by the magistrate when he said that there was strong public feeling that these regulations should not be unduly maintained and enforced. In his (Mr. Justice Avory's) view this sort of legislation, which was intended to restrain the vicious propensities of those who indulge in the eating of sweetmeats up to bedtime, must be maintained and enforced to keep such vicious propensities in check (Mr. Justice Avory as reported in *The Times* of April 14th, 1923)."

The occasion of this *obiter dictum* was, no doubt, that petty piece of oppressive legislation regulating the sale of sweets, the object of which was, however, in no sense moral. But observe the gusto with which the learned judge gives it a moral interpretation and finds an excuse for bringing down the

pedagogue's cane ; then ask yourself what sort of community ours would be to live in if Mr. Justice Ivory was autocrat of it, or, still more awful thought, if it was composed of people like him.

And there is a more immediate warning to be drawn from this passage. A great deal of social legislation has been passed, and a great deal more threatens to be passed, which has been, or can be, partially justified on inoffensive grounds, but behind which the driving force is really this detestable spirit. It is not apprehensive, human affection, which makes Mr. Justice Ivory delight in depriving a flapper of an evening feast of chocolate ; I think we may be sure that he is not deeply concerned about her little stomach. But when he imagines her popping one cream after another into her mouth, what I fancy he feels is a kind of sudden anger, which would be expressed by exclaiming, " She must be stopped making a little beast of herself ! " We have all experienced this emotion ; many people feel it when they see a kiss. We can recognize it easily if we like. It is a wholly delicious feeling when we have the power to interfere ; and even when we have not, there is still a not uninteresting glow in it, though perhaps too much like an itch to be entirely pleasant. Nothing could be more opposed to a natural movement of human charity, or friendly concern for another than this emotion. It is in reality an intensely egotistic, self-assertive emotion. Controlled, as it often is in decently self-critical people, it often turns into patronizing contempt (that shows how little real regard for others enters into it) ; and when it is uncontrolled, it masquerades as concern for the happiness of those who have excited it. Lust does not more readily conceal itself as love ; jealousy counterfeit more cunningly a sense of justice. And this spirit is the Enemy.

THE PRIVY PATH

WHEN I come across some profound piece of criticism into which the critic has, I feel, been led by surrendering to his own temperament, I wonder if my own method of criticizing is not mistaken. One cannot get away from one's own temperament any more than one can jump away from one's own shadow, but one can discount the emphasis which it produces. I snub my own temperament when I think it is not leading me straight to the spot whence a general panorama of an author's work is visible. This point is often some obvious little knoll or terrace, which almost everyone would mount to get a view. Perhaps the other kind of criticism is more valuable, in which the critic wanders down a vista which he is impelled by a personal impulse of curiosity to explore, ignoring what lies to the right or left of him, or what others see when they just look round them. But again how often the most alluring and mysterious little path in a garden leads only to the gardeners' privy !

THE LAST OF ALFRED DE MUSSET

ONCE out in the street I withdrew my mind from the play I had just seen, "Madame Sand," and thought about Alfred de Musset. I found myself in memory sitting in a small orchard at the end of a straight, sandy path, down which a gaunt old gentleman, my grandfather and my best link with the past, was proceeding towards me with a bottle of wine under his arm and two glasses clinking in his other hand. It was exceedingly hot. The blossoming apple trees, though charming, threw a very thin quality of shade upon our round iron table and chairs. Earlier in the afternoon we had quarrelled over the respective merits of Victor Hugo and Ibsen as dramatists. My grandfather could not hear Ibsen mentioned in the same breath with even Schiller, let alone Victor Hugo: "Ibsen's world," he had shouted, "is a world without honour," while I had maintained that the motives and emotions of Victor Hugo's characters were theatrical and fictitious. For an hour I had lain, extenuated, on a velvet sofa, while the old man paced the little sitting-room haranguing me. It was an oven in spite of the closed green shutters. Every now and then he would stop in his stride to stroke my cheek with his long hand and call me repentantly "angel," before again becoming stormy and abusive. At last we had compromised over Alfred de Musset. He was romantic enough for anything, and I was prepared to admit that he was adorable. So my grandfather said, if we moved to the orchard, he would tell me a story

about him, while we drank together the cup of peace.

“ When Musset died in 1857, Sainte-Beuve wrote that people felt as though they had buried their youth with him. It was a generous tribute, but it corresponded little to realities. As far as I remember about fifty people followed the coffin down the Rue de Rivoli, and at the Place de la Bastille I don't suppose there were twelve of them left. The Academy was not there in force—though Mérimée and Sainte Beuve attended. But, mark you! when more than twenty years later, in 1880, some young men organized a fête in Musset's honour, there must have been five thousand people in the hall of the Trocadéro! You see, long before his death Musset had become a dim figure—he was forty-six when he died. His great power lay in his sensibility and he had an extraordinary precocious gift of expression. He wrote beautiful verses very young. *J'ai dit à mon coeur, à mon faible coeur.* . . . Musset is in that line. Yes, love is the only good—from 1830 to 1840 he was obsessed by that idea :

*Le seul bien qui me reste au monde
Est d'avoir quelque fois pleuré,*

—you remember? And how he sometimes wrote with the natural elegance of La Fontaine?

J'ai vu verdir les bois et j'ai tenté d'aimer

Well, then, towards the end of his life he went utterly to pieces. He drank too much. He hugged his own sorrows—rightly, for they had inspired him; but at last they failed to do so any longer. He became neglected, dilapidated—and he was forgotten. . . . My story has to do with that.

The great lady of the world of letters was

then the Princess Mathilde Bonaparte, who collected authors. I suppose one evening at her salon the conversation had turned on Alfred de Musset. One can imagine how they would talk, how half pensively and half mockingly they would all agree that Musset had expressed the sorrows and ecstasies of their youth. What ages ago all that seemed! She declared she would ask him to dinner.

Now Musset had once been the ideal dandy, and he was still as proud of being a man of birth and a man of the world as he was of being a poet. He had long ceased to go out in society and this invitation must have been an event of some importance to him. He was determined to shine, and I am afraid, as you will gather, he must have prepared himself for it too well. When the evening came (seven was then the fashionable dining hour), Musset did not appear. The company waited an hour and then went down to table, where his chair next the Princess was empty. They had just sat down when he entered and took it without a word of explanation or apology. He was deathly pale, and when offered soup he asked for brandy. "In this," he said abruptly, holding out a tumbler. The footman hesitated and looked towards his mistress: "Give M. de Musset what he asks for," she said. He drained off half a tumbler and was immediately and violently sick. There is no need to describe the scene. He was supported out of the room, and he lay down in the Princess's boudoir till dinner was over. Then he came up to the drawing-room, and leaning his elbow on the mantelpiece discoursed delightfully for half an hour, made a formal bow—and disappeared from the world of salons and dinner-parties for ever.

THE LOVER OF LIFE

I HAVE been re-reading George Wyndham's letters, and thinking about him. What a lover of life he was ! The contagion of another's enthusiasm roused his own ; he loved that reverberation, and sought to create it in conversation. He was extraordinarily, almost femininely, appreciative. To such a temperament to appreciate, to enjoy, whether it be a fine day, a book, a charming face, a ride, a friend's wit, a gesture of affection, amounts to an obligation, and to fail to meet it is to fail to live. It is not of such stuff, of course, that the workers of the world are made, nor the creators. If such a one possesses facility and gifts (Wyndham's gifts were indisputable) he may be profusely productive, but he will remain an amateur (not necessarily a dilettante) to the end. He may work with spurts of energy that shame even the concentrated ; but, presently, he will hear life knocking at his study door. At the first gentle tap he may shake a resolute head, but who can resist opening for long if instinct tells him that on his threshold stands not that old bore, Experience, but an ever radiant princess with a smile for him—specially kind for him ? Such men inevitably squander themselves, and are alternately reproached for wasting their gifts and for pretending to possess more talent than they have. The gesture with which they scatter largess (let the word stand for affection as well as talent) to some seems generosity, to others ostentation. But the fact remains, men often love a lover of life more than those (it may not be fair, but it is so) who devote themselves steadily to their service.

THE PLEASURES OF DISGUST

HAVE you ever been irritated by the pretensions and confusions of modern life? By the mediocrity of its sentiments and the meanness of its types? Have you ever felt disgusted with the faces in omnibuses; the restaurants where you feed, the rooms in which you sleep, the conversation of artificially amiable people, the mechanism of your own body, the messiness of food, the dreariness of professions? Then (this sounds like the beginning of an advertisement of a quack medicine), if you read Huysmans, you will find that whatever has disgusted you in these things is described with an atrabilious vehemence, an extravagance of acrimonious precision, at once exaggerated and acute, which will bring you a little temporary relief. Two elements enter into this relief, the glow of satisfaction at finding branded what ought to be branded, and the reflection, "Well, *I* at any rate can stand life a little better than that." If you read Huysman's description of being shaved in a cheap shop, you will be amazed at your past fortitude. We are apt to associate travelling in "a sleeper" with luxury and comfort; after reading Huysmans one realizes that to spend a night in a wagon-lit is torture; his account of such a night eclipses in horror Poe's *Pit and Pendulum*. There is no greatness of mind in Huysman's indictment of Life; but to the shivery fastidious it is a keen pleasure to find their complaints stated by one more shivery and more fastidious than themselves—and with such a fury of contempt. I find it myself a most refreshing change from the cheery pooh-pooh attitude. The

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fun of reading Huysmans is the fun of seeing the ugly, dank, flaccid thing, presented not as it is, but as even uglier, greasier, meaner.

MEMORY

THERE is no doubt that Conrad possessed a memory of most unusual retentiveness. Only in course of time could he forget what was not significant to his imagination or consonant with the prevailing mood in which he wrote. When he attacked a theme near to him in time, the process of selection was too intentional to be really successful, and much more laborious. That, I believe, is the chief difference between the journalist, when he has a genius for reporting, and the artist. The fresher impressions are in the mind of a reporter, the better use he makes of them ; in the evocation of incidents, and facts in their immediacy lies the merit of his work, while the artist's success depends upon steeping them in a mood, characteristic of his whole response to life ; details and incidents must stew first in that emotional part of him which we label roughly memory. William James, I seem to remember, distinguishes between two kinds of memory : one is that retentiveness which enables a man to remember things, whether he is interested in them or not. (This is the examination memory.) The other kind of memory functions only when a fact is associated with a number of things which concern him nearly ; emotion is an essential part of it. The model journalist has a fly-paper memory to which things stick of their own accord. The other kind of memory is indeed the mother of the muses.

THE TWO MINUTES' SILENCE

I ASKED a friend of mine (I had better tell you he was a Catholic) what he thought about the yearly ceremony of the Two Minutes' Silence. "It is a substitute," he said. "People would like to pray for the dead, but they think it wrong. It is a makeshift; just as M. Coué's knotted string with his injunction to assert at each knot, 'Every day in every way I get better and better,' was a substitute for the rosary, while psycho-analysis, a method for getting things off the mind, is a substitute for the Confessional. Only, of course, telling beads does not compel one to assert what may be a series of thumping lies; and the man who employs psycho-analysis gets no absolution except from himself."

Touching Armistice Day, and this new ceremony, I will quote from a source I have rarely tapped in these pages, the daily papers. On the evening of that day, under the heading, "Men who Broke the Silence," some curious incidents were recorded which I record again here, since they offer an opportunity for each reader to discover something about himself. After reading them ask on which side your sympathies lie, or in what proportion they are divided, and you will then discover something about yourself which may prevent your future reactions from surprising you:—

Several incidents marked the Great Silence, one in the City threatening to develop seriously.

THE TWO MINUTES' SILENCE

A young man in Moorgate Street wearing a "Trilby" and a brown linen coat of the kind usually worn by warehousemen, took no notice of the signal, but continued on his way. People at first looked at him in surprise, and one or two tried to trip him up. The offender paid no heed to the booing directed at him, but pushed his way through the crowd and walked across the road. One man said to him, "Take your hat off, or something will happen to you." This warning was also ignored.

Immediately the silence was over about 200 people made a rush for him. He stopped to try and argue with them, saying, it was stated by an eye-witness, that he was at liberty to please himself as to what he did.

A boy grabbed his hat from his head and threw it in the street, where it was soon kicked and torn beyond recognition. Several people aimed blows at him. One, delivered by a tall, strong man, hit the offender on the jaw and seemed to have loosened several teeth and made his mouth bleed freely. The crowd was now thoroughly roused, and the man sought refuge in the first door-way that presented itself. This happened to be the entrance to a large office-furniture emporium.

The crowd tried to follow him, shouting threats. Many women were among the pursuers, and one of them who was particularly angry led the chase.

The manager of the shop, realizing the situation, conveyed the man through the premises and let him out at the back door into another street. Meantime the crowd in front of the premises had grown to considerable proportions. Ultimately the police had to be summoned to clear the pavement.

Another young man, who persisted in making his way along the Strand with his hat on throughout the Two Minutes' Silence, was mobbed and taken into custody for his own protection. He was a seaman, aged twenty-six, from Great Yarmouth, and he was charged at Bow Street with insulting behaviour. It was stated that when the crowd attempted to mob him, he took off his hat and coat and offered to fight. The magistrate said he had behaved very foolishly. "Why?" he replied. "Why all these demands? It is not an order. People can please themselves." He was bound over.

Two 'bus drivers abused by the crowd for not shutting off their engines retorted that they were ex-Service men, and refused in spite of menaces to do so.

Now, which do you sympathize with, the non-conformists or the people who mobbed them? The answer you make to yourself will throw light on your attitude towards all sorts of moral, social and political questions. It is interesting to reconstruct the scenes in imagination. In the case of the 'bus drivers the wrangle seems to have gone on, probably noisily, during the silent minutes; in the others, one can imagine the people in the streets frozen to impatient immobility, flaming with righteous indignation within, till like released terriers after a rat, they dashed at the non-conformists. Which do you sympathize with—"the tall strong man" who hit the offender on the jaw and loosened his teeth, or the man in the brown linen coat?

My sympathies are on the side of the latter. Non-conformists are often excessively disagreeable but there is salt in them, and a community without a sprinkling of them is damnable to live in—"Read Trotter's *Herd Instinct*," as Tarlton would say.

THE TWO MINUTES' SILENCE

Lovers of liberty are often asked what they mean by liberty. An important part of what they mean is that the public should never be able to impose complete uniformity, either in opinion or in the expression emotion.

MAKING SPEECHES

WHAT daunts me when I get upon my feet to speak is not that I am unaccustomed to public speaking, but that all my previous speeches have been failures. And yet I think, or rather, to use the formula of words which was constantly on the lips of that cautious metaphysician Sir William Hamilton,—“It seems to me that I think I believe,” that there is the making of a speaker in me. In the first place, why otherwise should I continue to be asked from time to time to address audiences if there were not still a faint glimmer of hope animating those who know me that I *might* be worth hearing? And secondly, I am certainly endowed with two-o’clock-in-the-morning eloquence—solitary eloquence. But I believe this faculty is not uncommon. When kept awake by indignation or anger I am able to give absent persons a trouncing, which in my opinion falls little short of Chatham or Cicero in that line. Quicken me at that dark hour with a small personal grievance or a gigantic public scandal (like the behaviour of the British in Ireland), and off I go. Sentences of trenchant invective, unforgettable sarcasm, polished irony and thumping directness flow from me easily. Yet at an earlier hour, in the presence of other human beings, it is as much as I can do to stutter through the tamest statement of my case. How is this? What is the explanation? What paralyses me—the sound of my own voice or the eyes of an audience?

I took up Mr. Ruffin *On Forms of Oratorical*

Expression and How Delivered in the hope of learning how others had overcome these inhibitions. Nothing certainly would be more useful (or delightful) than to be able to make a speech. The object of this work "is to foment and encourage the spirit and study of the art of public speaking." It is not "fomenting" I need; but the book is advanced for me. I have never read one so full of hard words. Yet I was as surprised as M. Jourdain when he found he had been talking prose all his life, to discover that I had been achieving unawares *Enantiosis* (if you say "He's no fool," that is *enantiosis*), *Enthymema*, *Homœoptoton*, *Homœoteleuton*, *Pathopœia*, *Paraineticon*, *Polysyndeton*, *Synchorexis*—I was surprised to find how I had been performing feats of that kind all my life. If you say, "We shall miss our train; we shall be late for dinner; they will be furious," and add bitterly, "All right, all right," implying, "have it your own way and be damned"—that is *Synchorexis*. It is amazing the degree to which rhetoricians have classified and distinguished forms of speech. Indeed, from one aspect this book reminds me of a rock garden full of labels with long strange names on them attached to inconspicuous flowers, and where the labels are always much larger than the flowers. (That sentence, by the way, is an example of *Homœoteleuton*; you observe both parts of it end with the same word). Of course it does not do to think to yourself, "Now I am going to bring off *Enthymema*," which indeed you do whenever you say, "I shall take my umbrella, for I think it will rain" for you are suppressing a statement implicit in your reasoning that umbrellas are useful when it rains; but, if you catch yourself using such forms in a speech, Mr. Ruffin will tell you how best to deliver them.

He analyses the endowment of various famous

orators, and the qualities which enabled them to sway their audiences. You will find this part of the book more interesting; but it will probably fill you with despair—and so will the pictures of the countenances of these orators. Take Henry Clay. I daresay you could manage most of his favourite forms of oratorical expression, *Anaphora*, *Apostrophe*, *Asteismus*, *Apodixix*, *Asyndeton* (he favoured the A class), and *Epagoge*, *Eperotesis*, *Ethos*, *Sermocinatio*; but if your countenance refuses to “beam with animation,” your eye to smile or dart flashes, your body, “in moments of vast passion to bend almost double,” your “homely mouth to shrink and curve in passion almost to a Grecian chiselling,” these achievements will avail you little.

At the end of the book will be found practical general hints to speakers, and, immediately before the end, descriptions of the impression made by such modern orators as Gladstone, Bright, Spurgeon, Bryan, Harding, Lloyd George. Their methods are analysed and specimens of their finest passages are quoted. These passages are often fifth or sixth rate from the point of literature. It looks as though, with pen in hand and plenty of time and a passion, many a writer, hardly known to fame, could *write* purple patches as good as theirs. Take Bryan’s famous speech on bimetallism—the one which ended, “You shall not crucify mankind upon a cross of gold.” It drove his audiences (he repeated it hundreds of times) almost wild with enthusiasm, but it is merely a trenchant piece of bombast to read. It is the voice, the man, the giddy whirl of excitement round the speaker, that make the difference. Oratory is a hot-house plant; an orchid that shrivels to an ignominious object in cool air. Yet it is a splendid art—finer than acting, to which it is sister.

I heard Gladstone when he was a very old man. His voice then was like the dashing of a cascade at the end of a cavern ; but old—very old—as he was, there was still surprising animation in his gestures. His great speeches, however, still read well. It is so easy to hear the voice as you read (I cannot supply Spurgeon's or Bright's), for Gladstone's sentences are obviously spoken oratorical sentences, not sentences composed with a pen by a man who imagines himself in the act of speaking, nor are they like Spurgeon's and Lloyd George's speeches, mere talk. They are marked by the delays and circumlocutions of elaborate improvisation like the later style of Henry James. They have dignity of form. You cannot help reading them aloud in your head. (The way to read the later Henry James, by the way, is to read him aloud ; sentences which puzzle the eye, in spite of involutions and clauses, then become clear to ear.) There is a tremendous solemnity about Gladstone's sentences ; gravity is their characteristic as definite as fire is the characteristic of that long-dead orator, John Donne, in whom Mr. Ruffin would be interested.

I have not read Mr. Ruffin's book properly—only dipped in it, and I may be doing him a wrong in saying that among his hints to speakers he has not emphasized the paramount importance of sincerity. Sincerity can be faked, but it is hard to fake it, and the worst of learning the art of oratory is that it is apt to destroy sincerity until that art has become second nature—and even then the art may be more obtrusive than sincerity. There is a story of Carlyle carrying a motion against Gladstone at the meeting which founded the London Library. "Down he came," grumbled Carlyle, afterwards describing the occasion, "like Apollo with his shining bow and quiver ; and I a poor simple Orson, with no winged words at command. . . ."

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This was repeated to Gladstone, who exclaimed: "Simple Orson, indeed! It was the most wily speech I ever heard in my life." Several famous writers are really orators on paper. Carlyle is certainly one; to-day Mr. Wells, I think, is another. The oratorical temperament is excited by words. The born orator is even more excited by his speech than by his subject. He may have learnt his speech by heart, repeated his phrases, as Canning did, again and again in front of a looking-glass, but no sooner does he begin to utter those words, than he is fired like a poet when he first grasps a glittering conception.

HIGHBROWS

PERHAPS the most important benefit we derive from reading Mr. Aldous Huxley's book of essays, *Music at Night*, is an increased awareness of the privilege and advantage of being a "Highbrow." In one essay, called "Foreheads Villainous Low," he discusses the new stupidity-snobbery and ignorance-snobbery which make people apt to congratulate themselves upon the lowness of their brows.

"It is not at all uncommon now," he says, speaking of a shy reference to Mantegna in one of Mr. Ernest Hemingway's novels, "to find intelligent and cultured people doing their best to feign stupidity and to conceal the fact that they have received an education." This is the new snobbery. Twenty years ago it was still a compliment to say of a man that he was clever, cultivated, interested in things of the mind. To-day the candidate for such praise is terrified of being labelled "Highbrow." I can still recall the look of astonishment which appeared on the face of a fellow-journalist when, defending some article I had written, I once said, "*Of course* it was highbrow; I am a highbrow." "Well," he replied, "you're the first man I've ever heard admit that he was a highbrow."

The first! Think what that implies. That I should have admitted that my self-respect as a journalist depended upon my being a cultivated writer who cared for things of the mind struck him as a daring confession, instead of a boast which at diffident moments I might easily think excessive.

I cannot imagine being ashamed of such culture as I possess.

What I am ashamed of—considering that I have done nothing all my life but read, talk, listen and write, is that this culture still has such yawning gaps, such shaky foundations.

What is the cause of this ridiculous diffidence which afflicts intellectuals to-day? Why should they allow every muddled ignoramus to assert his superiority? Why should they be afraid of betraying their own? In the essay "Foreheads Villainous Low" Mr. Huxley answers those questions. He attributes primarily the arrogance of lowbrows to-day, and the sycophancy of highbrows, to universal education, a tree only planted fifty years ago. Its first fruit, he says, has been contempt for culture. "When culture was confined to a few, it had a rarity value comparable to pearls or caviar." But "when finally the Many were given the education which, when it was confined to the Few, had seemed so precious, so magically efficacious, they found out very quickly that the gift was not worth quite so much as they had supposed—that, in fact, there was nothing in it. And, indeed, for the great majority of men and women, there obviously is nothing in culture. Nothing at all—neither spiritual satisfactions, nor social rewards."

True, certainly true, but let us stop and see how far these truths take us. Culture has no longer the same prestige-value that it once had; and education, though professional democrats still prescribe it as a remedy for every social or individual ill, is, as the Many have found out for themselves, far from being "a magic elixir." To put it bluntly, culture administered as education has bored them, and brought in very meagre returns. They have begun to clamour instead for useful or technical instruction. Therefore, those who reveal culture

and their faith in it in every line that they write, appear to the Many to be fraudulent and pretentious bores—for that is what they mean when they call them “Highbrows.”

Mr. Huxley has discovered the cause of the confidence of such people to-day. They are backed up by the spirit of a commercial age.

“Mass production is impossible without mass consumption. Other things being equal, consumption varies inversely with the intensity of mental life. A man who is exclusively interested in the things of the mind will be quite happy (in Pascal’s phrase) sitting quietly in a room. A man who has no interest in the things of the mind will be bored to death if he has to sit quietly in a room. Lacking thoughts with which to distract himself, he must acquire things to take their place; incapable of mental travel, he must move about in the body. In a word, he is the ideal consumer, the mass consumer of objects and of transport.”

There you have it! “In the modern industrial state highbrows, being poor consumers, are bad citizens.” No wonder, then, the highbrow is made a universal butt, and the timid highbrow disowns his distinction. Nevertheless his advantages are obvious. To be a highbrow is the cheapest, safest way of living a contented life; and intellectual and æsthetic interests are the only cures for that uncomfortable itch, envy, which robs even the successful of half their satisfaction. The man who is rich in mental possessions is not likely to be depressed by the lives of the wealthy, on the contrary, they tend to add to his entertainment.

This is, of course, annoying to those rich people whose pleasure in their possessions is largely dependent upon being envied for them, and naturally

annoying to those who want to sell the highbrow something, or to organize a good time for him. But there is a wider reason why he exasperates, and a deeper one. The world of culture is a closed society, and any closed society is intolerable to a democratic age. Aristocracy of birth has lost prestige and the aristocracy of wealth lacks mystery. Anybody is in it the moment he has made money, and out of it the moment his money comes to an end. It is a precarious distinction.

The only exclusive world remaining to-day is that of the highbrows. Into that you cannot buy your way. You cannot even, alas, be certain of qualifying as a highbrow by hard work, by reading the best books, looking at the best pictures, hearing the best music. You may get an entrance on those terms, but you will be found out when you are there. No wonder highbrows are jeered at and abused! I have watched the embarrassments of those trying to be gentlemen, and of those pretending to be rich; but, believe me, these were nothing to the bewildered misery of those trying to live beyond their intellectual means. The robust lowbrow knows this by anticipation, so he contents himself with shouting sour grapes over the vineyard wall.

The intellect creates a hierarchy according to the intellect, the heart desires equality for all. They are incompatible aims. But the highbrow journalist can do two things for those outside the wall. He can point out that the qualification for becoming a highbrow is to care for the things of the mind, and that the amount of knowledge of literature, of art, and of philosophy required is actually small: interest is everything. Granted interest, knowledge grows. Then he can warn the outsider not to be unduly intimidated by the shibboleths of highbrows. Mr. Huxley's essay on "History and the Past" opens with an amusing comparison between

Culture and the special knowledge which a united family accumulates.

“Do you remember Aunt Agatha’s ear trumpet? And how Willie made the parrot drunk with sops in wine? And that picnic on Loch Etive, when the boat upset and Uncle Bob was nearly drowned? Do you remember? And we all do; and we laugh delightedly; and the unfortunate stranger, who happens to have called, feels utterly out of it. Well, that (in its social aspect) is Culture. When we of the great Culture Family meet, we exchange reminiscences about Grandfather Homer, and that awful old Dr. Johnson, and Aunt Sappho, and poor Johnny Keats. ‘And do you remember that absolutely priceless thing Uncle Virgil said? You know. *Timeo Danaos . . .* Priceless; I shall never forget it.’ No, we shall never forget it; and what’s more we shall take good care that those horrid people who have had the impertinence to call on us, those wretched outsiders who never knew dear mellow old Uncle V., shall never forget it either. We’ll keep them constantly reminded of their outsideness.”